



The LJMU Guide to Planning for learning (6th Edition for use in phase 1 and 2)

“Learning is defined as a process that brings together personal and environmental experiences and influences for acquiring, enriching or modifying one’s knowledge, skills, values, attitudes, behaviour and world views.” (OECD 2010:21) OECD (2010). Nature of Learning: Using Research to Inspire Practice. Retrieved from <http://www.oecd.org/education/>

The aim of this guide is...

, ... to outline the expectations of planning individual, sequences of lessons and learning for LJMU Initial Teacher Education (ITE) student teachers. It. The guide should be used alongside the subject specific pedagogy and teaching methods, assessment and research informed practice recommended by your subject and module leaders. This guide can also be used as a design guide for student teachers creating their own plans for learning and sequences of learning.

Secondary PGDE Team

Secondary Initial Teacher Education team

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The LJMU Planning for learning policy

Revised and updated for student teachers commencing initial teacher education (secondary) in 2021

Effective sequencing of learning that promotes support and challenge for all learners, is foundational to lesson planning in the short term (individual *lesson plans*), medium term (*sequences of learning*, for example 4 to 6 lessons) and long term (*schemes of work*, for terms/years/key stages). The LJMU Planning for Learning Policy (Secondary) and Guide is written as a companion to planning for learning for beginning teachers and provides a framework for student teachers on LJMU initial teacher education programmes and is to be used in conjunction and discussion with expert practitioners. There is consideration of planning for quality learning experiences and teacher workload reduction.

Therefore, student teachers on postgraduate secondary programmes must ensure that:

1. They understand that effective planning for learning is more than simply filling in boxes on a 'lesson plan'. The former ensures that learning takes place; the latter articulates the intentions and structure of a lesson. Effective teaching can and should transform pupils' knowledge, capabilities and beliefs about learning and this needs to be carefully planned.
2. During ALL *phases*, every lesson, or part of lesson, taught by a LJMU student teacher must be appropriately planned, resourced and evaluated to promote learning and progress.
3. During ALL *phases*, appropriate school data is used to plan effective sequences of learning, in accordance with the institution's safeguarding and GDPR¹ policies
4. During ALL *phases*, they provide their ITT Mentor with their lesson plan at least 24 hours prior to the lesson – specific arrangements are at the professional discretion of the ITT Mentor in agreement with the Liaison Tutor.
5. During *phases 1 & 2a*, they use the **LJMU Lesson Plan**² pro forma for every solo taught lesson on a student teacher's timetable.
6. During *phases 1 & 2a*, they use and adapt existing learning resources.
7. During ALL *phases*, they begin to use the **LJMU Lesson Plan Overview**, the placement school's lesson plan pro forma³ or develop their own⁴, following the host department's curriculum - medium and long-term planning.
8. During *phase 2b* they begin to use medium term planning from the placement school's curriculum for every class that they solo teach.
9. During *phase 3*, they transition to weekly planning and evaluation and begin to use the **LJMU Student Teacher Planner**⁵ (**Error! Reference source not found.**), provided that their ITT Mentor judges their planning to be good or better. Medium term planning (by the department or student teacher) must be in place for all timetabled solo taught lessons.
10. During *Phase 3*, they begin to write and evaluate their own medium-term plans and sequences of learning, using the **LJMU Sequence of Work** pro forma, providing evidence of a minimum of two key stage 3 units and one key stage 4 at *Triangulation*.

¹ General Data Protection Regulations 2018.

³ That meets the minimum requirements outlined in the LJMU Guide to Planning for learning.

⁴ Ibid.

⁵ Where traditional teacher planners are used, the student teacher must provide evidence of weekly lesson evaluation in the Placement Experience File (on the One Drive).

11. During ALL *phases*, they provide a full lesson plan using the **LJMU Lesson Plan** pro forma for all lessons formally co-observed by the Liaison Tutor and ITT Mentor – i.e., using a Lesson Analysis Form⁶ (LAF) for feedback. The ITT Mentor must also be provided with an appropriate lesson plan for every weekly lesson observation formally recorded on a LAF.
12. During *Phase 3*, they revert to using a formal lesson plan pro forma⁷, should their ITT Mentor or Liaison Tutor judge the quality of their lesson planning to be insufficient to promote effective learning and progress.
13. During *Phase 3*, they critically evaluate and adapt learning resources, and create bespoke materials that support and challenge all learners in their timetabled solo taught lessons.
14. During *Phase 3*, they maintain records for all timetabled solo taught classes, including monitoring, assessing and recording of learning and progress⁸.

Note: beginning teachers progress at their own pace following the LJMU ITE Curriculum, and the ITT Mentor (with the Professional Mentor and Liaison Tutor, where appropriate) should make a professional judgement as to when a student teacher in their care is ready to make the transition during Phase 3 between short term (lesson planning) and medium term (weekly planning and units of work) approaches to planning. Each student teacher must use the **LJMU Lesson Plan** pro forma when beginning to plan and teach solo lessons up to the end of Phase 2b; before making the transition to more sustainable approaches to planning, to ensure that they fully understand the elements of effective sequencing of learning. The purpose of lesson planning for student teachers is to understand and be accountable for effective sequencing of learning, to support, challenge and encourage learners to progress.

⁶ See <http://itt-placement.com/pgce-secondary/mentoring-process.php>

⁷ i.e. the LJMU Lesson Plan pro forma or suitable equivalent (see LJMU Guide to Lesson Planning).

⁸ Following placement school policy and practice, including GDPR.

Features of a lesson

Rosenshine's Principles of Instruction (2012)

Experienced and effective teachers consider a range of factors when planning lessons, **Rosenshine's Principles of Instruction** (Rosenshine 2012) is a foundation that summarises research informed principles for classroom practice that are useful to consider when planning. The principles are informed by:

- Research in cognitive science
- Research on classroom practices of master teachers
- Research on cognitive supports to help students learn complex tasks.

From this research Rosenshine formulated **ten key principles**, which he argued underpin any effective approach to instruction in lessons and we present this to you as fundamental to consider when planning for learning:

- Daily review
- Present new material using small steps
- Ask questions
- Provide models
- Guide Student practice
- Check for student understanding
- Obtain a high success rate.
- Provide scaffolds for difficult tasks.
- Independent practice.
- Weekly and monthly review.

'The most effective teachers ensured that students efficiently acquired, rehearsed, and connected knowledge. Many went on to hands-on activities, but always after, not before, the basic material was learned.'
(Rosenshine 2012:2)



Find out more about Rosenshine's principles of instruction here (2012)

<https://www.teachertoolkit.co.uk/wp-content/uploads/2018/10/Principles-of-Instruction-Rosenshine.pdf>

Experienced and effective teachers consider a range of factors when planning lessons, including:

Learning intentions link to the sequence of learning/ medium and/or long-term planning (Scheme of Work), and are driven by the curriculum (national curriculum, school curriculum or external examinations). Effective learning intentions consider how pupils will demonstrate that they have learnt and indicate what intended learning should look like. There are different terms that are used and defined variously in schools. Here are our quick definitions:

Aim: a broad learning intention over a period of time

Objective: the key learning intentions for knowledge, skills and understanding

Outcome: what learners will do to demonstrate their knowledge, skills and/or understanding (i.e., an objective)

The LJMU Lesson Plan pro forma identifies one, measurable learning outcome, which is broken down into success criteria (see below). A lesson focus box, at the top of the page, acts as a space for a broader statement that is similar to stating aims and objective; but our approach to lesson design centres on the learning outcome, to avoid the confusion of mixing up aims, objectives and outcomes.

Pedagogical approaches (or teaching methods) are often aligned to a specific educational theory, such as behaviourism, constructivism or cognitivism – each of which has different underpinning assumptions and interpretations of learning and how it is achieved. Learning is a cognitive process involving experience, memory and recall/action.

Examples of pedagogical approaches include:

- Constructivist
- Collaborative
- Enquiry- based
- Integrative
- Reflective

In your subject specific studies, including lectures/workshop and reading literature, you should expose yourself to different approaches and plan for them in your teaching maintaining a critical stance on the benefits and limitations of teaching methods and contemporary research informed practice in conjunction with discussions with expert practitioners.

Each pedagogical approach will have a range of associated **strategies and techniques** to promote learning behaviours and activity, including instruction, enquiry, application, recall, reflection and testing, to name but a few. Some approaches are more teacher-led, such as direct instruction, teacher questioning, demonstration, etc. Whereas other are more pupil-led, such as group or collaborative work or discovery learning.

The role of subject knowledge

Subject knowledge is the actual knowledge teachers are expected to teach, for example you may need to have a thorough understanding of a Shakespeare play in order to be able to teach it. 'Subject pedagogy' is understanding how the topic can be taught. For example how can Shakespearian language be made more accessible for school pupils to help them understand the story and context of the play?

Why is subject knowledge important?

'The most effective teachers have deep knowledge of the subjects they teach, and when teachers' knowledge falls below a certain level it is a significant impediment to students' learning. As well as a strong understanding of the material being taught, teachers must also understand the ways students think about the content, be able to evaluate the thinking behind students' own methods, and identify students' common misconceptions.' (Coe et al 2014).

<http://www.suttontrust.com/researcharchive/great-teaching/>

How can I improve my subject knowledge?

- Carry out an honest subject knowledge audit. Test it by completing A Level exam papers and checking each other's work and looking at it against the mark scheme.
- Be aware of the gaps in your knowledge when you are teaching and set aside time in your planning to address these gaps.
- Make use of subject associations. They have many teaching resources but also produce articles around specific topics subject knowledge. Eg There are some excellent articles in Teaching Geography on the science of plate tectonics that address the misconceptions still often taught, and believed, by teachers. No more convection currents or earthquakes caused by "plates grinding past each other".
- Observe experienced teachers in schools teaching topics you are unsure about.
- Use GCSE and A'Level core texts to work on your subject knowledge of the core curriculum for your subject.
- Attend webinars and view podcasts around the topics that you are struggling with.
- Attend subject association conferences.
- Discuss your subject knowledge with your expert practitioner (mentor) in school when planning lessons

Finally, **learning environments** include two key elements: the *climate for learning* and the *classroom management*. Climate for learning includes everything from the physical environment (displays, layout, natural light, access to technology, etc.) to attitudes to learning and expectations (from the adults and the children). Classroom management (including how the classroom is organised) is an integral approach to planning lesson, rather than a 'bolt on' reaction to undesirable behaviour. Effective classroom management can reduce the need to use so-called behaviour management techniques to control classes, by strategic and intentional planning.

Anatomy of a lesson

Within a lesson, are nested a sequence of **learning episodes**, comprised of activities directly linked to a learning outcome to help pupils learn. Effective episodes focus on the learning intentions and flow in a deliberate and progressive sequence within the lesson. An effective lesson plan also considers not just the juxtaposition (order and sequence), but also the transition from one episode to the next and appropriate timings. An episode can be classed as a wide range of teaching activities, *including*:

- Starters and plenaries
- Introduction and instructions
- Teacher modelling and explanation
- Independent and group work
- Questioning and dialogue
- Formative assessment, etc...

Effective sequencing of episodes within a lesson or lessons with an extended sequence should consider the *context* of the learning, including the prior knowledge and attainment of the pupils and how it fits in the broader curriculum context and subject knowledge required for teaching effective

lessons. Clarifying the *intentions* ensure that appropriate and clear expectations are set, which can be used to develop criteria to judge and evaluate the success of teaching. With clear intentions and outcomes at the end of a period of learning, the *structure* of a series of appropriate episodes can be planned in sequence (stages/steps) that promotes progression. A stimulating start and end to a lesson, with effective transitions linking one episode to the next ensure coherence for the learners to navigate their way through the lesson with attention paid to cognitive load and working memory. Four principles (Figure 1 Thinking through the process of planning for learning) to keep in mind when you are planning include:

- Context
- Intentions
- Structure
- Coherence

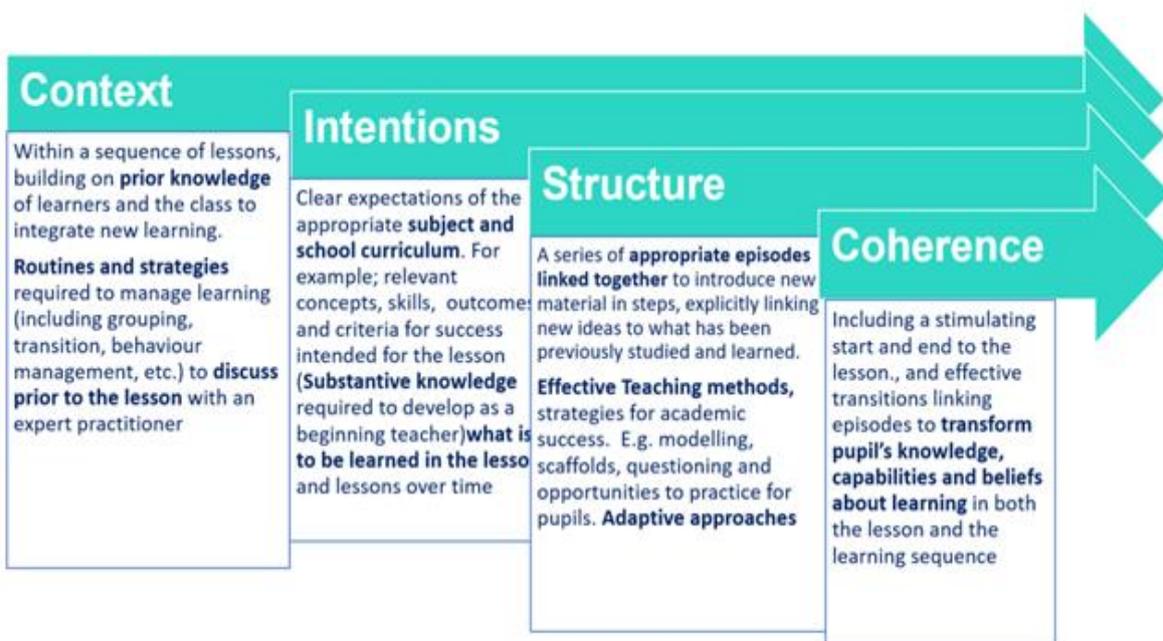


Figure 1 Thinking through the process of planning for learning

The purpose of formal lesson planning

In summary:

- Lesson plans benefit the student teacher, as she/he develops skills and knowledge. The lesson plan and evaluation support reflection on the balance of specialist subject knowledge, methodological skill and knowledge of the learners;
- Formal planning (planning for learning and learning sequences) encourages the student teacher to consider individual, and sequences of, lessons systematically, to make sure that all elements are clear and promote progress relating to learning objectives;
- Planning promotes learner engagement with subject content and the student teacher's development of self-confidence as a leader, and facilitator, of learning;
- Lesson plans provide a record of teaching as evidence for your assessment on the programme and as a resource for future teaching;
- Lesson plans demonstrate student teachers' planning, preparation and knowledge (subject and pedagogical) to mentors and tutors observing lessons. This is part of Quality Assurance, ensuring that the presence of a student teacher (working alongside an experienced mentoring teacher) in the 'classroom'⁹ has a positive impact on the progress of all learners. Teacher expectations can affect pupil outcomes; setting goals that challenge and stretch pupils is essential.
- Lesson Plan pro formas for a student teacher will (normally) be more detailed than those regularly used by most (but not all!) experienced practitioners in schools and colleges. As a beginning teacher, a student teacher must develop an in-depth understanding of the elements of good planning and lesson structure before planning becomes instinctive or 'second nature' as learning involves a **lasting change** in pupils' capabilities or understanding. Effective teachers introduce new material in steps, **explicitly linking new ideas** to what has been **previously studied** and learned.

Elements of a Lesson Plan (short term planning)

There are many elements that might be included within an effective, student teacher's lesson plan pro forma. However, the following are typical (and essential for a training lesson plan):

- **Lesson Details:** practical details relating to the lesson;
- **Learning Intentions:** linking the lesson to the school curriculum, scheme of work, assessment frameworks, prior learning and expectations for the lesson. This section is important for framing the learning intentions prior to the lesson and monitoring of progress during and after the lesson;
- **Lesson Schedule:** breaking the lesson down into manageable 'chunks' that flow and support learning. This section should be written and used as a practical and accessible document for use within the lesson;
- **Lesson Evaluation:** reflecting on the impact of the planning, teaching and learning activity on learners' progress, setting targets for future lessons. This section provides the opportunity for student teachers to reflect on both successes and mistakes, informing future planning.

⁹ See Glossary of terms.

Elements of a Sequence of learning (Medium term planning or Unit of work)

Similar to the lesson plan, there are many formats and elements that might be included within the pro forma for a sequence of lessons. The two sections below outline typical content:

- **Curriculum Framework** – aims and overview of the unit of work, links to relevant programme of study identifying specific subject knowledge to be developed, cross-curricular links, resourcing, facilities, etc.;
- **Assessment Framework** – it is very important that teachers consider how they will assess pupil progress over time.
- **Sequencing of Learning** – overview of the learning objective and outcomes for each lesson in sequence, summarising the learning activities, key resource and assessment opportunities.

Refer to the GLOSSARY OF TERMS (page 28) for definitions of key technical planning terminology



The Lesson Plan

Short term planning

(See Error! Reference source not found.)

Section 1 Lesson Details

Before the three sections outlined above are addressed, the lesson plan document should identify the following information relating to the lesson:

- Student teacher's name
- Class – year/group/set
- Class size – number of learners/pupils in the class
- Date of lesson
- The sequence of the lesson (i.e. lesson “2 of 6”)
- The subject being taught (e.g. Mathematics)
- The Sequence of learning that the lesson is part of

Other details that may be appropriate or useful may be:

- The name of the institution (school/college/academy)
- The number of learners in the group
- The type or profile of group (e.g. top set, lower band, SEN group, etc.)

Section 2 Learning Intentions

The learning overview should include the following sections:

- Lesson focus: aims, concepts and keywords;
- Targets from previous lesson evaluation;
- Learning outcomes, success criteria and formative assessment (linked), including possible misconceptions;
- Adaptive learning– strategies to include specific learners in the lesson;
- Classroom management – practical strategies, including sequencing of activities, classroom layout and behaviour management;
- Extending learning – strategies to consolidated and extend learning within (e.g. extension activities) and outside of the lesson (e.g. homework);
- Resources – the specific equipment and sundries that you need for the lesson;
- Embedding literacy and numeracy into the lesson
- Risk assessment - subject specific health and safety actions;

The Learning Intentions put the teacher's and the learners' activities (outlined below) into the wider curriculum context. This section is the most important part of a lesson plan, in particular the learning outcomes, success criteria and formative assessment (Figure 3). Effective teachers introduce new material in steps, **explicitly linking new ideas** to what has been **previously studied** and learned. They effectively use retrieval activities to consolidate learning over time.

Lesson Focus

Write a brief statement outlining the **intended learning** for the sequence of lessons, including key threshold concepts and keywords relevant to the knowledge, skills and understanding being taught (Figure 2). In this box, you may indicate the prior learning that is assumed and/or expected for learners to be able to engage with the learning outcome for this lesson – especially at the beginning of a unit. Knowledge being developed in the lesson can be conceptual ('knowing that') and/or procedural ('knowing how').

Figure 2 Lesson Focus

Subject & curriculum: concepts, knowledge and skills: Including links to the relevant programme of study, scheme of work / sequence of learning.	Misconceptions Refer to GCSE criteria, examiners reports, university taught sessions, Ofsted subject report, National Curriculum.
Prior learning What prior learning have the pupils completed	

The lesson focus may be written as a learning objective¹⁰, describing the knowledge, skills and/or understanding that you (the teacher) intend learners to engage with during the lesson. Learning objectives are generally written as generic statements about the learning that should be taken away from the lesson and, potentially, be applied in other contexts in the future. They are often linked to the programme of study (the National Curriculum, an external qualification specification or the school curriculum – i.e. schemes of learning being studied).

Misconceptions and prior learning

When considering the sequence of lessons you need to be clear what prior learning has been covered in previous sequences of work. You also need to consider the main misconceptions that the pupils may make. You can find information about the key misconceptions or the different topics in your subject ofsted research report, GCSE criteria, examiners reports, the subject taught sessions in university and your national curriculum documentation.

The 'Backbone' of lesson planning

The backbone of lesson planning is the *learning outcome*, with linked *success criteria* and *formative assessment*.

Learning outcomes

¹⁰ What pupils will learn

The **learning outcome**, which learners will demonstrate that they have learnt during the lesson, is the backbone of an effective lesson. This is often the first place that teachers start when planning and should precede the scheduling of learning activities (page 2 on the lesson plan) to ensure that the lesson flows and stays focused on the core, ‘intended’ learning. You should set one overarching lesson outcome. The **formative assessment** activity (or activities) identified alongside are the activities, techniques and/or strategies that you will use to ‘capture’ and evaluate whether that learning has taken place and, together with the success criteria, to what extent.

Figure 3 Learning Intentions

Learning Objective (intended learning) What should the pupils know and understand?	Learning Outcome and Success Criteria (progression statements) How will I know to what extent the LO has been achieved by all pupils?	Formative Assessment (assessment method) What will provide evidence to indicate the extent to which pupils have met the learning objective? What strategies have I built in?
e.g. to learn that different places have different climate graphs due to a variety of climatic conditions...	e.g. pupils will have drawn an accurate climate graph and interpreted it	e.g. retrieval activity / teacher questioning / decision making / extended writing / short tests / peer & self-assessment etc.
Potential misconceptions (related to this lesson/topic)		

A **learning outcome**¹¹, as opposed to a learning objective, describes what learners will **do/apply** within (or by the end of) the lesson to demonstrate their confidence or competence. **An effective outcome must *avoid* words like “know” or “understand”, which cannot be easily defined and measured.**

It is recommended that each lesson will have **one** learning outcome, directly linked to your lesson focus / learning objective, describing the core learning around which the lesson is designed. Pupils may learn other things in the lesson, or revisit knowledge and skills from a previous lesson, but these should be viewed as peripheral or incidental to the main outcome for example **Practice** is an integral part of effective teaching; ensuring pupils have **repeated opportunities to practice**, with appropriate guidance and support, increases success.

The learning outcome informs what will be assessable in the lesson. The learning outcome defines what you intend learners to achieve by the end of the lesson. Therefore, each learning outcome must have success criteria that enable you to monitor learning within the lesson and progress from one lesson to the next.

Formative Assessment

Learning outcomes and success criteria should be written so that they are SMART¹² (specific, measurable, achievable, realistic and time-bound). Therefore, the impact of teaching and learning should be able to be observed and measured through a range of formative and summative means. Effective assessment is critical to teaching because it provides teachers with **information** about **pupils’ understanding** and **needs** There are many approaches to formative assessment, which are not defined in detail within this document (there will be lectures on your programme and you will find plenty of books, papers and websites on the topic). Formative assessment can include

¹¹ What pupils will do to demonstrate their learning (as opposed to a learning objective, which focuses on the content to be taught)

teacher assessment and activities that involved the learners (assessment for learning¹³ or AfL). This box in the lesson plan should focus on the methods being used to evaluate impact on learning progress in relation to the learning outcome (and success criteria) and be routinely considered on a lesson-by-lesson basis. To be of value, teachers use **information from assessment to inform the decisions they make**; in turn, pupils must be able to **act on feedback for it to have an effect**.

Examples of formative assessments include

- feedback and feedforward (targets) on workbooks or worksheets used in the lesson
- Questioning and dialogue during the lesson
- Written recall activities (e.g. 1-minute papers, etc.)
- Observational, photographic or video evidence of artefacts or performances
- Self or peer assessment against the success criteria (e.g. RAG rating, next steps, etc.)
- Retrieval activities.

NOTE:

At this point in the lesson planning, you are advised to 'jump' to the Lesson Schedule (page 2 of the lesson plan) - to plan the sequence of learning activities - returning to the personalised learning, etc. once you have a better idea of the 'shape' of the lesson.

Do not attempt to complete a typical lesson plan, such as the LJMU pro forma in order from the top of page one to the end! Unless this approach works for you, of course.

Section 3 Lesson Schedule (Page 2 of the lesson plan)

There are four elements of the lesson schedule to consider, which relate to the sequencing of activities. These are:

- Timings
- Teacher activity
- Learner activity
- Assessment opportunities

¹³ As opposed to assessment of learning (typically summative assessment) or assessment as learning (the use of assessment and testing as part of learning activity).

The most important point, regarding the lesson schedule, is that it must be a useful and practical document that you will have on-hand during the lesson. If the document cannot be quickly referred to for timings, reminders to teaching points or activities, then it is less useful and effective. Initially you will probably need it throughout each lesson to give you confidence and help you to keep on task, maintain pace, etc.

As a rule of thumb, aim to have the lesson schedule for a typical single period (50 minutes to 1 hour) presented on one side of A4 (Font: Arial 12pt) – UNLESS including diagrams or listing prompt questions within the schedule. So write in **bullet points** (brief statements) rather than **prose** (descriptive paragraphs).

Timings

Planning the timings for each activity or stage of a lesson is important for several reasons, and you will need to consider these when planning. Firstly, it aids the ‘chunking’ of *episodes* (smaller steps or stages of learning) within the whole lesson Figure 4. Typically, one of these ‘chunks’ (or stages) will be between 5 and 10 minutes (not less than 5 minutes), because the timing becomes meaningless and the activities broken down into too many elements. Chunks should also be no longer than 10 minutes, because (a) you should avoid long teacher inputs in favour of breaking down learning into stages¹⁴ and (b) when learners are working individually or in groups you should also be active (e.g. scanning the room, supporting and actively managing learning).

Figure 4 Learning episodes

Time <i>(real-time)</i>	The Teacher <i>Concepts, subject knowledge, skills, teaching methods used to lead learning and classroom management e.g. routines</i>	The Learners <i>Activities to connect concepts, subject knowledge and skills.</i>
		<p style="text-align: right;"><i>Insert additional rows as required...</i></p>

Secondly, timings will help both you and your observer (i.e. subject or professional mentor) to know what you should be doing at any particular part of the lesson. This leads to the decision on whether to use real times (e.g. 09:45, 13:50) or durations (e.g. 5 minutes) for each activity

¹⁴ Or build in progress checks, such as questioning, to longer teacher inputs

(stage/chunk) within the lesson. The advantages of using real times are: (a) you can work out where you are up to if you lose track of time or forget what you should be doing at a particular time; and (b) it helps an observer interpret your lesson plan and compare planning to delivery. Therefore, you might use real times when you are beginning to teach full lessons (Phase 1 and 2) or when being formally observed. The advantages for using durations are: (a) they are quicker to formulate and relate to the actual time spent on each activity; and (b) the lesson plan can be utilised (recycled) for a different group or by a different teacher in the future. Therefore, you might use durations as you become more confident and have well-paced lessons (Phase 2 to 3) or are being formally observed by a professional mentor, university tutor or external examiner.

A useful alternative to the real time OR duration timings, would be to use both (Table 1). Timings (real time or duration) should be presented as a column in a table, on the left hand side.

Table 1 Example of timings

Time	The Teacher
09:05 (5 min.)	Brief the class, lined up... - Setting up equipment...
09:10 (10 min.)	Explain starter activity -

It is common for beginning teachers to focus on the teacher activity, initially, with limited description of learner activity. As they grow in confidence, awareness and skill in the classroom, they are able to write detailed description of learning. The details in each column should reflect the balance of classroom activity, which is likely to focus on pupil activity, rather than that of the teacher – the teacher directing learning to foster learning and promote progress.

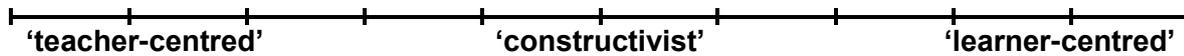
Teacher Activities

As this heading suggests, this column in the lesson schedule describes what you do to lead and facilitate learning, ensuring that the Learning Outcome is met. In this section you will identify, and briefly describe, the teaching episodes (key activities/stages of the lesson) the teaching strategy, technique or approach that you will be adopting. There are a wide variety of pedagogical styles and approaches, which you will become aware of through training sessions in university and on placement, through reading and academic assignments, and observing good and outstanding teaching and learning. Some of these will include:

- Start-up routines (arrival, safety, setting up, etc.)
- Starter activities
- Explanations
- Teacher modelling
- Demonstrating
- Questioning (identify key questions in the plan)
- Other learning episodes
- Plenary activities
- End of lesson routines (tidying up, packing away, departing, etc.)

Consideration should also be given, in the teacher activity column, to what you will be doing whilst the learning activities are taking place – i.e. working with individuals and groups, monitoring progress, assessing, etc.

Figure 5 Teaching styles continuum



Depending on the aims of the lesson you will adopt a number of different teaching styles along a teacher-learner led continuum. Taking two 'extremes', these could be described as teacher-centred' (or behaviourist) versus learning-centred (Figure 5).

The behaviourist approach puts the practitioner (teacher) in the leading role, focusing on influencing learners' external actions and behaviour, for example direct teaching, demonstration, etc. The learner-centred approach tends towards the learners being empowered to discover learning. There are a number of theories that favour learner-centred approaches, including critical pedagogy, which focuses on agency, and some aspects of constructivism. Both descriptions are extremes and much good teaching will draw on both approaches (and philosophies). However, a middle ground might be to adopt a cognitivist (e.g. Piaget¹⁵) or social constructivist approach (e.g. Vygotsky¹⁶, Bruner¹⁷ and Dewey). The social constructivist approach considers the role of the teacher as a more knowledgeable other (MKO), who is responsible for facilitating and leading learning in a classroom (social) context, taking in to account learners' abilities and potential. Social constructivism has a central concept called the zone of proximal development (ZPD), which describes the learning 'within reach' of a learner, building on prior learning. The teacher then 'scaffolds' learning, breaking it down in steps; taking into account the abilities and developmental ages of the learners. This is not a 'free for all' or unstructured individual discovery of knowledge, but a strategic and facilitated structuring of learning with the aim of enabling learners to acquire independence, knowledge and (ultimately) mastery.

Additional 'prompt sheets' or cards?

Where you plan for questioning, it may not be possible to include a list of every question within the lesson plan itself. In these circumstances, it may be appropriate to create an additional 'prompt sheet'. For example, where you are planning questioning that extend or filter learners responses or you intend target questions to particular learners or groups. However, you should use these for additional prompts rather than to rephrase or replace the lesson schedule – if you can't follow the lesson schedule, focus on improving it rather than creating an extra layer of planning!

Learner Activities

¹⁵ Piaget, J. (1936). *Origins of intelligence in the child*. London: Routledge & Kegan Paul.

¹⁶ Vygotsky, L. (1978). *Mind and Society: The Development of Higher Psychological Processes*. Cambridge MA: Harvard University Press

¹⁷ Bruner, J. (1983) *Child's Talk: Learning to Use Language*, Oxford: Oxford University Press

Planning the learning episodes (activities) is one of the **most important** aspects of lesson planning. One of (if not) the key measures of effective teaching and learning is pupil progress. Therefore, it is essential that the planning considers the most effective or expedient methods for learners to engage with the Learning Objective and Outcomes.

As with the teacher activities column, there are a wide variety of pedagogical styles and approaches, which you will become aware of through training sessions in university and on placement, through reading and academic assignments, and observing good and outstanding teaching and learning. Some of these will include:

- Group or paired work
- Independent learning
- Peer and self-assessment
- Observing
- Recording
- Demonstrating
- Practical work or application
- Microteaching / peer mentoring
- Coursework
- Quizzes or tests

Also, consideration should be given to what learners are expected to be doing whilst teacher input is happening, to avoid passiveness or disengagement by pupils.

Assessment Opportunities

Points where assessments (formative or summative, formal or informal) will take place may be indicated, either, in a fourth column or highlighted within the Teacher or Learner Activity column, at the time when they will take place. The choice to have three or four columns may influence the choice of page orientation (i.e. portrait or landscape).

NOTE:

At this point in the lesson planning, you are advised to 'return' to the Lesson Schedule (page 2 of the lesson plan) - to consider the personalised learning etc.

Section 2 revisited - Learning Intentions

Support and challenge

This section (see Table 2 and

Appendix 6) is where you will identify adaptive learning *strategies* or *activities*. Learners should be identified with a code (e.g. initials) rather than by name, with a statement outlining the strategy or approach to personalising their learning. Data on learners can be found on special education needs and disability (SEND) or 'gifted and talented' (G&T) registers, Education, Health and Care

(EHC) plans, through teacher knowledge (classroom, SENCO, pastoral, etc.) or observations. A EHC plan will include an outline of a learners individual needs and suggest strategies to support and personalise their learning, including the how a Teaching Assistant¹⁸ (TA) might be used.

Table 2 Whole class and individual strategies

Adaptive teaching Pupils with identified special educational needs and disability are likely to needs require additional or adapted support. What effective strategies will be in place in your lessons? What have pupils previously learned? How are you building in additional practice, greater scaffolding or greater stretch?							Classroom management Routines and strategies to manage learning (including grouping, transition, behaviour management, etc.) <i>E.g. routines for the start of lessons...</i>
Number of learners:	HA	SEND	EAL	PP			
Working with an expert colleague to discuss barriers and adapted support to ensure high expectations for all groups with access to a rich curriculum: <i>E.g. scaffolding...</i>							

Context of class: are they set / set against a different subject / or mixed ability?	Opportunities for literacy and numeracy <i>How are literacy and numeracy developed over the sequence of learning?</i>

There may be other factors to consider, such as Emotional and Behavioural Difficulties (EBD), English as an Additional Language (EAL), family or personal circumstances or religious beliefs/practices, when personalising learning. The aim being to include all learners, by either creating opportunities or removing barriers (for the teacher as well as the learner).

Individual plans

On occasion you may decide (in consultation with your mentor) to create an individual plan for use with support staff, such as a teaching assistant (TA) or technician. This would be appropriate where a learner has specific requirements that cannot be adequately described within the main lesson plan. This will be used in exceptional circumstances, rather than as part of the normal lesson planning process, and will link closely with the learners Education, Health and Care (EHC) plans, which are normally available from the school Special Educational Needs Coordinator (SENCO) or via your mentor.

A learning support brief should include:

- The learning intentions for the lesson, including the lesson focus and keywords
- An indication of the individuals to be supported and the role that you want the TA to take within the lesson
- A support schedule indicating the TA and learner activity
- Space for feedback from the TA and actions for the next lesson

See **Appendix 4** for an example of a Learning Support Brief pro forma.

¹⁸ Sometimes referred to as a learning assistant (LA) or a learning support assistant (LSA).

Classroom management

Are there any generic subject specific teaching (or behaviour management) strategies that you are adopting within the lesson or the sequence of learning.

General strategies, such as group work, paired activities, etc., would be identified in this section, demonstrating your ability to utilise a range of approaches to teaching and learning. Subject specific strategies may be identified from your engagement with research or subject literature in your subject sessions. For example: command style in physical education; design and make in design and technology; or experimentation in science. Consult your subject leader in university and subject mentor on placement for further guidance.

Additional information and activity

Figure 6 Additional information and activity

Teaching targets Identifying your key targets for teaching from LAF, weekly meeting, other lesson feedback	Resources Teaching and learning materials, equipment, etc.	Pupil Grouping / classroom design: How are the pupils organised in the classroom e.g. in groups, individuals? What is your rationale for these groupings?

To extend the 'E's, **engagement** and **enabling** activities can be used to refer to strategies designed to **engage** disaffected learners or **enable** all learners to be included in the learning objectives and meet learning outcomes. Disaffected learners (i.e. learners either actively or passively disengaged from the learning process, environment or content) can be from anywhere along a continuum of able learners (those who have displayed high attainment in the past) and are not stretched or challenged¹⁹, and may become disruptive in time, to learners who have underachieved (or under-attained) in the past and have become disenfranchised or reluctant to learn²⁰. *Engagement* and *enabling* activities may be included as part of the **personalised learning** or **teaching and learning strategies** (see sections above), depending on the learner(s) or groups that the strategy is aimed at.

These *additional* activities have an auxiliary function as a 'safety net' (although this is not their primary purpose) should learners complete the planned activities earlier than expected. This may even, in some cases, be as a result of main activities not going to plan! So you may (in the early days of training) plan extension activities with this in mind (in addition to those to stretch and challenge learners).

Resources

¹⁹ Or perceive this to be the case!

²⁰ This may be a self-protection strategy.

Any key teaching and learning resources, including specialist materials and equipment, that are (a) not readily available in the 'classroom' or (b) need to be prepared in advance of the lesson and recorded in the lesson plan (Figure 6). Resources might include:

- Worksheets;
- Interactive Whiteboard (IWB) resources and slideshows;
- Mini-whiteboards, pens and wipers;
- Audio-visual materials;
- Technology Enhanced Learning²¹ (TEL);
- Learners' work;
- Stationery;
- Tools, equipment, machinery, etc.;
- Learning objects/artefacts, etc.;
- Alternative learning environments²².

Risk assessment

Every learning activity and process (including equipment) undertaken in schools/colleges should be risk assessed. There is no standard format, but departments should have relevant and up-to-date health and safety documentation. This means that risk assessments in lesson plans (Figure 7) need **only identify hazards that are specific to the lesson** and not 'normal' to the classroom (note: some specialist areas, such as D&T, PE and Science may be exceptions to this rule-of-thumb). When assessing risk the following steps should be used:

- **Hazards** - identify the equipment or process that could cause potential harm.
- **Risk** - identify the harm that could be caused by the hazard, and to whom.
- **Control** - identify the reasonable control measures to be taken to minimise risk of harm.

Figure 7 Risk assessment

Risk Assessment (specific to the learning activities and subject – i.e. not relating to the general risk assessments for the room, etc. – add/remove rows as required)		
Hazard	Risks	Control measures

Research informed practice to develop effective planning

Learning to plan so that all learners make progress, is a complex process. As a student teacher, at the beginning of your career, you will develop your ability to design lessons that support and challenge all learners to make effective progress. You will also develop approaches to make increasingly efficient use of your time, without cutting corners, setting yourself up for a sustainable

²¹ Such as visualisers, digital cameras, voting systems, tablet devices, etc.

²² Such as sports centers, museums, galleries, etc.

and rewarding life as an educator. Calderhead (1996, in Mutton et al, 2011²³) describes six characteristics of effective planning for beginning and experienced teachers.

1. Planning occurs at different levels

At a basic level planning occurs from the *micro* (sequences of 'episodes' in a lesson), to the *meso* (sequences of 'lessons' in a single topic) and the *macro* (sequences of topics across a year or key stage). Planning within subjects also sits within the wider context of a 'school curriculum', which determines the subjects that learners experience in different years or key stages, how subjects are timetabled and what choices learners have in what they study. A school curriculum is not an 'off the shelf' product, but rather an expression of a school's ethos, aspirations and cohort.

Furthermore, the school curriculum sits within broader national frameworks, such as the National Curriculum and qualification frameworks (e.g. GCSE, A Level, etc.).

2. Planning is mostly informal

It is a common misconception amongst student teachers that the lesson *plan* is synonymous with lesson *planning*. This is not the case! A lesson plan is a formal articulation of planning, which communicates a student teacher's intentions to a mentor or tutor; it has an important role to play in the administration of and accountability for a beginning teacher's planning (i.e. it demonstrates and reassures them that adequate planning and preparation is going into each lesson). However, lesson planning in its broader sense is an iterative process, where the teacher applies their knowledge and understanding of (a) a subject/topic, (b) effective pedagogical approaches and (c) and understanding of how children learn. To start using a lesson plan straightaway, especially popular ones like the so-called '5-minute lesson plan', can force a single process, slow down thinking and stifle creativity²⁴.

3. Planning is creative

As mentioned above, planning is essentially a creative process, where learning is *designed* with the 'users' (i.e. learners) in mind. Simplified lesson plans that force a particular process can slow down thinking, whether that be thinking about one aspect of a lesson before moving to the next or a particular method of sequencing and structuring learning activities. Similarly, trying to plan a lesson by filling in a formal, training lesson plan from the top of the first page to the bottom of the last, misses the point. There are many different styles and approaches to lesson planning, and student teachers need more structure than experienced teachers, who have more experience to draw on. Planning is not a rational process, so don't try to complete a lesson plan in the order presented. When planning, you are designing an imagined future. So start at the end (aka the 'Learning Outcome') and work your way back, considering appropriate activities (aka 'Learning Episodes') and the optimal sequence to achieve these ends (aka 'Learning' and 'Progress').

²³ Mutton, T., Hagger, H. and Burn, K. (2011). Learning to plan, planning to learn: the developing expertise of beginning teachers, *Teachers and Teaching*, 17(4), pp.399-416, DOI: 10.1080/13540602.2011.580516

²⁴ Using simplified lesson plans can be detrimental to a beginning teacher's progress with planning. A formal 'training' lesson plan (such as the LJMU pro forma) can act as positively disruptive tool in a way that simplified forms cannot. Especially when used to structure and articulate a lesson at the end of the planning process. This approach could be described as a 'training wheels protocol'!

4. Planning is knowledge-based

As a beginning teacher, you will lack the extensive conscious and tacit knowledge that more experienced teachers have. Therefore, you will find that it takes longer to plan a lesson. However, as your experience increases and approaches to planning develop, this will change over the year and take up less of your time without a detrimental effect on learning. Be aware that experienced teachers may have forgotten what it was like beginning to teach, and the shortcuts that they may suggest can rely on tacit (largely unconscious or automatic) knowledge. An experienced teacher can make it look easy, but this belies the wealth of knowledge that they have accumulated over the years. It is similar with classroom management, where a student teacher replicates what the experienced teacher does to manage behaviour and finds that it doesn't work for them – this missing ingredient is often a relationship with the class that isn't a quick fix! At the beginning the use of a lesson plan acts as a safety net or training wheels.

5. Planning must allow flexibility

Whilst it is common for beginning teachers to want a rigid and clearly defined framework when starting to plan lessons, making the process too procedural and simplistic can be misleading. A lesson plan may look good on paper, but classrooms are complex and uncertain places (John, 2006), where unforeseen pressures (such as time, organisation, attitudes and emotions) clash with the relatively closed and rational structures that have been planned. Beginning teachers do become more flexible as they develop a larger mental repository of effective lessons and learning and a broader pedagogical repertoire. It is a challenge for beginning teachers to reconcile the complex and often competing demands of the classroom. However, developing a flexible and responsive approach alongside a genuine understanding of the learners, enables the student teacher to adapt their teaching in response to an individual's, a group's and/or a class's needs.

6. Planning occurs within a practical and ideological context

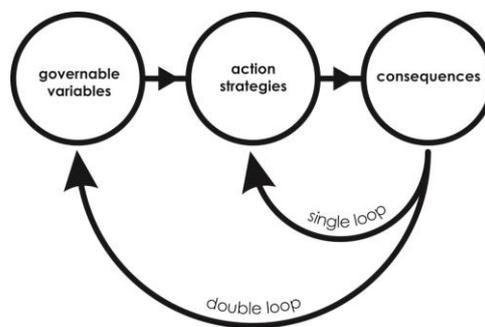
Similar to Characteristic 1, there are *micro* (context of the classroom), *meso* (context of the school/organization) and *macro* (context of the system) levels. Different groupings of learners (micro) can have different 'personalities' and collective characteristics and needs, which can and should change how lessons are planned. Effective planning responds to the needs of learners and adapts 'lesson plans' to support and challenge in an inclusive way. Similarly, different classroom management approaches may need to be adopted for one class compared to another being taught the 'same' lesson. The school curriculum, its ethos and community (meso) also affect planning. For example, a school action plan

might identify a particular issue to be addressed across the curriculum, such as marking and feedback in workbooks, requiring a collective approach across all subjects, year groups, etc. And the ideological position or approach of a senior management team (meso) or the government (macro) can overtly or covertly influence how learning is structured in departments and classrooms.

Section 4: Lesson Evaluation

The ability to reflect on and improve practice is an essential skill for the effective teacher. There are approaches to reflecting on practice and evaluating lessons, one of which being a three stage system (8) where *governable variables* (inputs - influencing that are controllable, including planning, environment, etc.), *action strategies* (processes - happened in the situation, how you or others acted, *consequences* (outputs - what was the outcomes of lesson were, e.g. progress, behaviour, teaching,

Figure 8 Double loop reflection cycle (Argyris and Schon 1996)



many (Figure factors what etc.) and the etc.).

Beginning by examining the 'consequences' (outputs or outcomes) of the lesson, the next stage of reflection is often to focus on the 'action strategies' (what you or the learners did). This is known as a single loop reflection, and is relatively limited as it focuses on actions within the lesson, without considering the 'governable variables' (inputs or outside influencing factors). This second, or double, loop of a reflective cycle prompts the professional to consider the wider aspects of an incident.

For the lessons that are not formally observed using a LAF form you should use the evaluation questions below to focus your reflection. Lesson evaluations should be completed after you have had time to think and reflect upon the lesson. We suggest that straight after the lesson if possible you take a short break, don't try and reflect upon the lesson while your emotions are high and you are still 'buzzing' from what happen in the lesson. When you do reflect sit in a quiet space and think objectively about the lesson considering the evaluation questions provided.

Table 3 Lesson evaluation

Focus question	Evaluation (choose 2 learning activity questions and 2 development questions to frame your reflection on learning and teaching) and discuss these in your weekly meeting with your key expert practitioner (mentor).
Learning Activity	
How effectively was the subject knowledge / concepts / skills focus of the lesson achieved by pupils?	
To what extent did you act on the expert practitioner's advice and target(s)?	
How are pupils progressing with integrating new ideas with existing knowledge?	
How did pupil grouping and / or classroom design impact on attitudes, values and behaviour?	
Where your strategies for adapting learning, building on previous knowledge and scaffolding / stretching effective?	
Areas for development	Evaluation
What are the questions to discuss with your mentor / expert practitioner because of this lesson?	
What teaching methods could be developed to allow you to integrate new ideas with existing knowledge? e.g. worked examples	
How will you adapt your teaching and assessment as a result of the learning observed in this lesson?	

The key aspects that should be evaluated in every lesson are (a) the **impact** of lesson planning and delivery on learning and (b) areas for **development** and **improvement** in the next lesson. You will reflect upon each lesson taught apart from your formally observed ones using the questions on the lesson plan. You need to consider and answer two of the lesson activity questions and one area for development question as a minimum after every lesson. Try to vary

which questions you answer so that over the week you consider all aspects of lesson planning and delivery.

When reflecting on your observed lessons you need to complete the more detailed critical reflection pro forma (Appendix 2) This allows you to reflect in more detail. The first 2 sections should be completed before you have the lesson feedback conversation and the last two after.

Note: every lesson must be evaluated, every lesson evaluation must consider the *implications and targets for teaching and learning in the next lesson*.

It may also be appropriate to set other targets (or opportunities for development), such as further reading, observations of good practice, coaching and mentoring, etc. In addition to your own observations and perspective, you should take into account and include aspects of discussions with your mentor following the lesson and/or in weekly meetings. Identifying the Teachers' Standards (or sub-standards) for each target (e.g. **[S3a]**) will help you track your progress, reflect on feedback and identify evidence for QTS.

Where you identify targets that go beyond those for the next lesson, you should include them in your **Weekly Meeting Record** (appendix 3).

Always focus on writing **SMART targets**, asking yourself; are they:

- Focused on a **Specific** area of theory and/or practice?
- Written so that they are **Measurable** and it is clear when they are achieved?
- **Achievable** within the context, timeframe and with the learners?
- Set **Realistic** (regarding time, experience, resources, etc.) expectation on yourself and the learners?
- Going to be addressed within the **Time-period** between now and the next lesson?



Being Observed

The lesson plan takes on a different dimension when you are being formally observed. There are three circumstances where this will normally happen during initial teacher education:

- **ITT Mentor or classroom teacher:** you will be formally observed, with written and oral feedback at least twice a week once teaching your full time table at the beginning of Phase 2. These observations provide student teachers with feedback in context across a sequence of lessons and from the perspective of the curriculum in the placement institution.
- **Liaison Tutor:** usually on two occasions across the ITE programme (typically once in phase 2a and once in phase 3), you will be co-observed by a Liaison Tutor (LT) and your ITT Mentor, with the LT observing both the lesson and the mentor feedback. The purpose of this kind of visit is to support (and train) mentors, ensure consistent standards of feedback and of judgments against the Teachers' Standards.
- **External Examiner:** at some point in the course (usually in the second half) you may be observed by an External Examiner (EE). EEs on ITE courses are teacher educators from other Universities, who are invited to feedback on aspects of the course, to inform future programme developments. Therefore, the purpose of an EE co-observation is to observe the feedback and support for student teachers both within the placement experience and at the university.

When being formally observed, it would be expected that a detailed lesson plan is provided, written so that an expert observer will be able to follow the learning intentions and sequence of activities. As well as the lesson plan, you should consider the following:

- Allow time before the lesson to meet and collect any visiting observers;
- Arrange a suitable space for joint feedback after the lesson;
- Set up an observation 'station' in a position in the classroom that is unobtrusive to the planned teaching and learning activities, with:
 - Copies of the **lesson plan** for *each* observer;
 - Any additional resources (including worksheets, PowerPoints, etc.);
 - Other relevant documents (such as individual plans, seating plans, etc.);
 - Your **QTS Training and Development File** – i.e. weekly meeting records, lesson observation and analysis documentation, etc.
 - Your **Placement Experience File** – i.e. planning documentation for each group taught, including lesson plans, evaluations, observation, mentoring documentation, etc.

Planning checklists

Use these checklists to evaluate the suitability of a school lesson plan pro forma for initial teacher training, in Phase 1 and 2,

Lesson Plan Checklist

Lesson Details:

Student teacher's name ; class/group ; date ; sequence ; subject ; topic

Learning Intentions

- Lesson focus (aims, concepts, key words)
- Targets (from previous lesson evaluation)
- Learning outcome
- Success Criteria
- Formative Assessment
- Support and Challenge
- Classroom management
- Extending Learning
- Resources
- Cross-curricular opportunities
- Risk assessment

Lesson Schedule

- Timings
- Teacher Activity
- Learner Activity

Lesson Evaluation

- Impact of teaching *on learning*
- Targets for next lesson (focus on learning)

Glossary of terms

Adaptive Teaching	Pupils learn at different rates and require different levels and types of support. Adaptive teaching involves providing targeted support to all pupils to support those who are struggling while applying high expectations to all groups and ensuring all pupils have access to a rich curriculum.
Assessment for Learning (AfL)	The use of formative assessment of evidence of learning (e.g. work completed by the learner, observed learning behaviour, etc.) and feedback to enable learners to progress. AfL enables the learner to engage with their own learning (where they are now) and to understand the next steps in making progress.
Assessment of Learning	The use of summative assessment strategies to measure attainment at the end of an episode of learning.
Behaviour Management	Techniques to effectively manage the actual or potentially disruptive behaviour of an individual or individuals, which is having (or may have) a detrimental effect on the learning of one of more members of a group.
Classroom	The generic term used to denote the physical environment where learning takes place, under the direction of a teacher or more knowledgeable other (MKO). The classroom may be a 'traditional' room, a laboratory, studio, workshop, gymnasium, field, or other subject specialist area (in some cases virtual)
Classroom Management	A holistic approach to planning that encompasses the whole learning experience, for example a sequence of activities may be planned in advance (proactively) lead and facilitate learning, and therefore minimise the risk of disruption (through inappropriate behaviours or other factors), rather than planning to use 'behaviour management' strategies reactively as issues arise.
Cross-curricular links	Links to shared aspects of the curriculum, such as literacy, numeracy, Social Moral Spiritual Cultural (SMSC) or Science Technology Engineering Mathematics (STEM). The term may also be applied to links to other curriculum areas within another (your subject) or co-teaching, shared between specialists.
Enrichment activity	An activity that stretches and challenges some learners (often higher attaining pupils) by adding more depth to their knowledge, skill and/or understanding, as being developed through the learning objective/outcomes for the lesson.
Episode	A discreet activity within a sequence of learning that directly relates to the lesson learning outcome; and promotes learning and progress. Effective episodes consider the progression from one learning activity to the next, with a 'golden thread' of learning from the beginning to the end of the 'lesson'. Episodes (like on the TV) have a common theme and make connections to the previous episode as well as the next one – i.e. they consider and communication the transition from one episode of learning into the next, and so on.
Extension activity	An activity that stretches and challenges some learners (often higher attaining pupils) by adding extending the learning activity being undertaken by the majority of learners, as being developed through the learning objective/outcomes for the lesson. For example, a learner may be tasked to do something additional with the learning outcome for the lesson, such as performing more complex application of a formula in Mathematics.
Formative Assessment	Formative assessment includes a range of formal and informal strategies and activities conducted by teachers in lessons (i.e. whilst learning is taking place) to aid evaluation and modify lesson planning to foster learning and promote progress. Formative assessment is often qualitative (descriptive) rather than quantitative (numeric) and is primarily for both the teacher and pupils. It is different to summative assessment, which measures educational outcomes at the end of a period of learning, and is often for external accountability and end of key stage assessment.
Inclusion	The overarching concept that every learner is provided the opportunity to learn within the 'classroom'
Learning Objective (LO)	The key learning intentions for knowledge, skills and understanding. Typically the LO will directly link to a Programme of Study (POS), such as the National Curriculum, other curriculum frameworks or the school curriculum.
Learning Outcomes	Learning outcomes describe what learners will do to demonstrate their knowledge, skills and/or understanding of the Learning Objective. Learning Outcomes are expressed as activity that can be measured to infer progress against the objective. They are often differentiated – e.g. all learners will... most learners should... some learners may...
Lesson	A structured learning experience over a fixed and predetermined time period planned by a more knowledgeable other (MKO), such as a teacher. In secondary and tertiary education, lessons are usually organised in timetables comprised of 'periods'.

Lesson Evaluation	Reflection is a key element skill for the professional teacher. It enables her/him to consider governable variables (influencing factors that are in some way controllable), action strategies (actions that are planned and delivered) and consequences (the result). Teachers reflect both 'in action' (while it is happening) and 'on action' (reflectively evaluating after-the-fact). LJM U ITE student teachers are expected to formally evaluate each lesson that is taught.
Lesson Plan	A written plan, structuring learning for a specific group around a learning objective (or objectives) and learning outcomes. A lesson plan will consider issues around inclusion, personalisation, and will break the lesson down into an ordered sequence of teacher and learner activities. It is good practice to reflect on and evaluate lessons, and this is an expectation for all LJM U initial teacher education (ITE) student teachers.
Lesson Schedule	The lesson schedule is the chronological sequence of activities (teacher and learner) from the start of the lesson. These can include stages, such as starter, main and plenary activities, but also include routines at the beginning and end of lessons, teacher modelling/explaining and discrete episodes (with mini-plenaries) within the lesson.
Period	A fix length of time that an educational institution uses to organise the delivery of the school curriculum (typically 50 minutes or one hour). Lessons can be single, double or (on occasion) triple periods. Formal periods (traditionally delineated by a 'bell') are common in secondary education.
Personalisation	Where the main lesson plan is adapted to take into account the specific needs of pupils. This may be related to Special Educational Needs or Disabilities (SEND), English as an Additional Language (EAL), Gifted and Talented (G&T), etc. Therefore, personalised learning might support learners to meet the Learning Objective/Outcome or stretch and challenge able learners to extend or enrich their learning. Individuals on SEN registers and strategies identified in Individual Education Plans (IEPs) should be referred to, where available.
Progression	The measure of the impact of teaching on learning is whether learners make progress – i.e. they become more confident and competent in their knowledge, skills and understanding, within the scope of the school curriculum. They both achieve (improve on prior performance) and attain (against an external measure).
Retrieval and interleaving	Pupils learn new ideas by linking those ideas to existing knowledge. They organise this knowledge into schemata (mental models). The Memory of concepts and ideas is often developed through experiencing repeated similar episodes. This repetition builds up the meanings of complex ideas and abstractions. Retrieval activities help lodge knowledge into the long-term memory, so the knowledge become automatic.
Resources	Any resources that are used to support teaching (e.g. Interactive Whiteboard resources, slideshows, etc.), learning (e.g. worksheets, equipment, technology, etc.) and assessment (e.g. self/peer-assessment sheets, quizzes/tests, etc.).
Risk Assessment	The process by which potential hazards are identified, the risk to learners defined and control measures put in place. With the exception of practical subjects (such as D&T or PE), hazards that are normal to the classroom (e.g. tables, chairs, etc.) should not be included, unless being used in a different manner or the room has inherent problems. Schools and departments/faculties should have detailed risk assessments for a learning activities.
Sequence of learning (SOL)	The organisation of sequences of lessons, contributing to learning within the school curriculum, over the medium (term) to long term (year or Key Stage). Sequences of learning should take into account prior learning and progression, both within and following the SOW. LJM U student teachers are expected to plan lessons and sequences of learning within placement experience institutions.
Targets	When lessons are evaluated, targets for both teaching and for learning, in the next lesson, should be identified and included in the following lesson plan. These may relate to planning for either teacher or learner activity.
Timetable	The arrangement of lessons for a year group, class, set or individual across each day (typically 5 to 6 periods) and week. Some schools use a two-week timetable format, arranging their curriculum to repeat on a fortnightly basis, rather than weekly.

Appendix 1

Lesson planing proforma



LJMU Lesson Plan

Phase 1 (orientation phase) and **Phase 2** (developing and consolidating learning phase) (Sept - March).

Lesson Details

Teacher _____	Class _____	Size _____	Date _____
Lesson _____	of _____	Subject _____	Unit of Work _____
Wk _____			
beginning _____			

Learning Intentions

Planning for learning, teaching and assessment, prior to the lesson, linking to prior learning.

Subject & curriculum: concepts, knowledge and skills: Including links to the relevant programme of study, scheme of work / sequence of learning.	Misconceptions Refer to GCSE criteria, examiners reports, university taught sessions, Ofsted subject report, National Curriculum.
Prior learning What prior learning have the pupils completed	

Adaptive teaching Pupils with identified special educational needs and disability are likely to need additional or adapted support. What effective strategies will be in place in your lessons? What have pupils previously learned? How are you building in additional practice, greater scaffolding or greater stretch?	Classroom management Routines and strategies to manage learning (including grouping, transition, behaviour management, etc.) <i>E.g. routines for the start of lessons...</i>														
<table border="1"> <tr> <td>Number of learners:</td> <td>HA</td> <td>SEND</td> <td>EAL</td> <td>PP</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Working with an expert colleague to discuss barriers and adapted support to ensure high expectations for all groups with access to a rich curriculum: <i>E.g. scaffolding...</i></p>	Number of learners:	HA	SEND	EAL	PP										
Number of learners:	HA	SEND	EAL	PP											

Context of class: are they set / set against a different subject / or mixed ability?	Opportunities for literacy and numeracy How are literacy and numeracy developed over the sequence of learning?

Risk Assessment (specific to the learning activities and subject – i.e. not relating to the general risk assessments for the room, etc. – add/remove rows as required)		
Hazard	Risks	Control measures

Additional detailed risk assessment may be required for specific subjects and lessons

Lesson 1: (insert date)

Learning Objective <small>(intended learning)</small> What should the pupils know and understand	Learning Outcome and Success Criteria <small>(progression statements)</small> How will I know to what extent the LO has been achieved by all pupils?	Formative Assessment <small>(assessment method)</small> What will provide evidence to indicate the extent to which pupils have met the learning objective? What strategies have I built in?
e.g. to learn that different places have different climate graphs due to a variety of climatic conditions...	e.g. pupils will have drawn an accurate climate graph and interpreted it	e.g. retrieval activity / teacher questioning / decision making / extended writing / short tests / peer & self-assessment etc.
Potential misconceptions <small>(related to this lesson/topic)</small>		
Teaching targets Identifying your key targets for teaching from LAF, weekly meeting, other lesson feedback	Resources Teaching and learning materials, equipment, etc.	Pupil Grouping / classroom design: How are the pupils organised in the classroom e.g. in groups, individuals? What is your rationale for these groupings?

Lesson Schedule

Including start/end of lesson routines, each learning episode (e.g. review of knowledge / concepts required for the lesson, retrieval activity, how new concepts / knowledge presented, modelling/explaining, scaffolding, opportunities for practice, questioning, group work, transitions, assessment, etc.), building on the learning objective for the lesson, including expected teacher and learner activity...

Time <small>(real-time)</small>	The Teacher <small>Concepts, subject knowledge, skills, teaching methods used to lead learning and classroom management e.g. routines</small>	The Learners <small>Activities to connect concepts, subject knowledge and skills.</small>
		<i>Insert additional rows as required...</i>

Learning evaluation

Focus question	Evaluation (choose 2 learning activity questions and 2 development questions to frame your reflection on learning and teaching) and discuss these in your weekly meeting with your key expert practitioner/mentor
Learning Activity	
How effectively was the subject knowledge / concepts / skills focus of the lesson achieved by pupils?	
To what extent did you act on the expert practitioner's advice and target(s)?	
How are pupils progressing with integrating new ideas with existing knowledge?	
How did pupil grouping and / or classroom design impact on attitudes, values and behaviour?	
Where your strategies for adapting learning, building on previous knowledge and scaffolding / stretching effective?	
Areas for development	Evaluation
What are the questions to discuss with your mentor / expert practitioner because of this lesson?	
What teaching methods could be developed to allow you to integrate new ideas with existing knowledge? e.g. worked examples	
How will you adapt your teaching and assessment as a result of the learning observed in this lesson?	

Lesson 2: (insert date)

Learning Objective (intended learning) What will the pupils know and understand	Learning Outcome and Success Criteria (progression statements) How will I know to what extent the LO has been achieved by all pupils?	Formative Assessment (assessment method) What will provide evidence to indicate the extent to which pupils have met the learning objective? What strategies have I built in?
e.g. to learn that different places have different climate graphs due to a variety of climatic conditions...	e.g. pupils will have drawn an accurate climate graph and interpreted it	e.g. retrieval activity / teacher questioning / decision making / extended writing / short tests / peer & self-assessment etc
Potential misconceptions (related to this lesson/topic)		
Teaching targets Identifying key targets for teaching from LAF, weekly meeting, other lesson feedback	Resources Teaching and learning materials, equipment, etc.	Pupil Grouping / classroom design: How are the pupils organised in the classroom e.g. in groups, individuals? What is your rationale for these groupings?

Lesson Schedule

Including start/end of lesson routines, each learning episode (e.g. starter/plenary, modelling/explaining, questioning, group work, transitions, assessment, etc.), building on the Learning Outcome for the lesson, including expected teacher and learner activity...

Time (real-time)	The Teacher Concepts, subject knowledge, skills, teaching methods used to lead learning and classroom management e.g. routines	The Learners Activities to connect concepts, subject knowledge and skills.

Insert additional rows as required...

Learning evaluation

Focus question	Evaluation (choose 2 learning activity questions and 2 development questions to frame your reflection on learning and teaching) and discuss these in your weekly meeting with your key expert practitioner/mentor.
Learning Activity	
How effectively was the subject knowledge / concepts / skills focus of the lesson achieved by pupils?	
To what extent did you act on the expert practitioner's advice and target(s)?	
How are pupils progressing with integrating new ideas with existing knowledge?	
How did pupil grouping and / or classroom design impact on attitudes, values and behaviour?	
Where your strategies for adapting learning, building on previous knowledge and scaffolding / stretching effective?	
Areas for development	Evaluation
What are the questions to discuss with your mentor / expert practitioner because of this lesson?	
What teaching methods could be developed to allow you to integrate new ideas with existing knowledge? e.g. worked examples	
How will you adapt your teaching and assessment as a result of the learning observed in this lesson?	

Lesson 3: (insert date)

Learning Objective <small>(intended learning)</small> What will the pupils know and understand	Learning Outcome and Success Criteria <small>(progression statements)</small> How will I know to what extent the LO has been achieved by all pupils?	Formative Assessment <small>(assessment method)</small> What will provide evidence to indicate the extent to which pupils have met the learning objective? What strategies have I built in?
e.g. to learn that different places have different climate graphs due to a variety of climatic conditions...	e.g. pupils will have drawn an accurate climate graph and interpreted it	e.g. retrieval activity / teacher questioning / decision making / extended writing / short tests / peer & self-assessment etc
Potential misconceptions <small>(related to this lesson/topic)</small>		
Teaching targets Identifying key targets for teaching from LAF, weekly meeting, other lesson feedback	Resources Teaching and learning materials, equipment, etc.	Pupil Grouping / classroom design: How are the pupils organised in the classroom e.g. in groups, individuals? What is your rationale for these groupings?

Lesson Schedule

Including start/end of lesson routines, each learning episode (e.g. starter/plenary, modelling/explaining, questioning, group work, transitions, assessment, etc.), building on the Learning Outcome for the lesson, including expected teacher and learner activity...

Time <small>(real-time)</small>	The Teacher <small>Concepts, subject knowledge, skills, teaching methods used to lead learning and classroom management e.g. routines</small>	The Learners <small>Activities to connect concepts, subject knowledge and skills.</small>
		<i>Insert additional rows as required...</i>

Learning evaluation

Focus question	Evaluation (choose 2 learning activity questions and 2 development questions to frame your reflection on learning and teaching) and discuss these in your weekly meeting with your key expert practitioner/ mentor.
Learning Activity	
How effectively was the subject knowledge / concepts / skills focus of the lesson achieved by pupils?	
To what extent did you act on the expert practitioner's advice and target(s)?	
How are pupils progressing with integrating new ideas with existing knowledge?	
How did pupil grouping and / or classroom design impact on attitudes, values and behaviour?	
Where your strategies for adapting learning, building on previous knowledge and scaffolding / stretching effective?	
Areas for development	Evaluation
What are the questions to discuss with your mentor / expert practitioner because of this lesson?	
What teaching methods could be developed to allow you to integrate new ideas with existing knowledge? e.g. worked examples	
How will you adapt your teaching and assessment as a result of the learning observed in this lesson?	

Insert additional lesson schedules as needed for this sequence of learning....

End of sequence learning

At the end of a half term or at the end of a topic (whichever happens first) reflect on the sequence of learning you have taught.

Consider how effective teaching has transformed pupils' knowledge, capabilities and beliefs about learning in this sequence. You may wish to include:

- Evaluation of your confidence of your subject knowledge in relation to subject curriculum expectations
- Pupil knowledge developed
- Research / evidence informed practice
- Sequencing of learning
- Organisation of groups
- Retrieval methods used
- Assessing e.g. systematic feedback and corrections
- Pupils explanations and outcomes of what they have learned
- Implications for next phase of your development informed by discussions with your mentor / expert practitioner.

Appendix 2

Evaluation for formally observed lesson

Reflective practice proforma for reflection (7218SREF AS1 example) (Gadsby 2020)

Focus - insert focus here

Step 1 - Deconstruct critical incident This is a description of the incident and your initial observations on your practice (A02)

Step 2 – Reflections from reading and discussions- Identify the areas you need to research and list possible authors to engage with for each area identified (A02)

Step 4 Key priority areas to transform practice (A03)

Step 3 Reconstruct critical incident Based on what you have learnt from the literature and discussions how would you change the structure of the lesson? Critically engage with the ideas. (A03)

Notes and actions

Questions for the mentor

Appendix 3 Weekly meeting record

Trainee Name:		Phase: (Term for Salaried):	
ITT Mentor:		Weekly meeting number:	
Establishment:		Date:	
Before the Meeting: Review progress towards targets agreed at previous weekly meeting OR targets set in any intervention/cause for concern/at risk action plan			Checklist for weekly meetings: Have you? To check the box –double click (left) the square then ensure “default value” = checked. OK
Review of Target 1 Review of Target 2 Review of Target 3			<input type="checkbox"/> Reviewed feedback from lesson analysis forms and used this to focus discussion? <input type="checkbox"/> Drawn on the ITT Core Content Framework to support training and targets?
At the Meeting: Discuss and briefly summarise the ITE curriculum knowledge you have gained (including from any LJMU sessions) and ways in which your practice has improved (since last week) Make brief notes about your training discussion this week (this should draw on your ITE curriculum content and personal/school priorities, enabling you to learn from expert colleagues)			<input type="checkbox"/> Identified progress against previous targets with a focus on the impact on pupils? <input type="checkbox"/> Set appropriate “learn how to “targets for the coming week? <input type="checkbox"/> Ensured some targets focus on subject specific knowledge and pedagogy?
Agree Specific Targets for Development in order to improve impact on learning (Targets should be specific and capture small steps; <i>they should include subject knowledge targets</i>)			
Target 1 (Learn/ Learn how to..)			<input type="checkbox"/> Discussed the trainee’s timetable and ensured it is sufficiently broad to meet their needs? <input type="checkbox"/> Supported trainee’s understanding of different pupil needs? <input type="checkbox"/> Checked the content of the QTS Training and Development file?
Target 2 (Learn/Learn how to,,)			
Target 3 (Learn/Learn how to..)			
Agree actions to be taken to address each target Work on Target 1 by Work on Target 2 by Work on Target 3 by			<input type="checkbox"/> Checked planning and evaluation in the School Experience file? <input type="checkbox"/> Where appropriate, reviewed targets from an intervention action plan/CfC or an At Risk Plan?
ITT Mentor’s Signature:		Trainee’s Signature:	

Appendix 4

Learning Support Brief



LJMU Learning Support Brief

Lesson Details

Teaching Assistant _____	Class _____	Date _____
Lesson _____ of _____	Subject _____	Unit/Topic _____

Learning Intentions

Lesson focus	Keywords

Individuals to be Supported	Role of Teaching Assistant

Support Schedule

Time	The Teaching Assistant	The Learners

Evaluation

Feedback from Teaching Assistant	Actions for Next Lesson

Appendix 5

Retrieval practice

In all subject areas pupils learn new ideas by linking those ideas to existing knowledge. Pupils organise this knowledge into schemata (mental models). Pupils' rich and diverse schemata lay the groundwork for their future learning. Pupils will draw on these webs of knowledge when they learn subsequent knowledge or carry out complex operations. (KA Ericsson and W Kintsch, 1995; S Dehaene, 2020). Part of effective teaching is to support pupils to make webs of knowledge through the use of effective retrieval techniques in all lessons.

The new knowledge that pupils learn becomes integrated within and across schema, which are complex structures in long-term memory that link knowledge and create meaning. (Education inspection framework: overview of research, Ofsted, January 2019).

The Memory of concepts and ideas is often developed through experiencing repeated similar episodes. This repetition builds up the meanings of complex ideas and abstractions. Research from cognitive science also highlights the importance of ensuring that some knowledge is learned to the point of 'automaticity. That means it becomes so familiar that the pupil no longer has to think about it they just know and recall the knowledge.

Retrieval should be planned into lessons to ensure all pupils are regularly reviewing their subject knowledge. When done well retrieval makes sure that there is a lasting change in pupils' knowledge and understanding. By committing key facts to their long-term memory pupils are more likely to learn more complex ideas. A pupil's working memory is limited and can be easily overloaded therefore there is a need to be constantly reviewing key knowledge so that it is learnt to the point of automaticity. Research has shown that where prior knowledge is weak pupils are more likely to develop misconceptions, especially when new ideas are introduced too quickly or too many ideas are explored at the same time leading to memory overload.

There are different levels of retrieval, there is short term retrieval – what was learnt last lesson, medium term retrieval what was learnt last week or last month and long-term retrieval what was learnt last term or last year. It is only when the pupils can confidently retrieve material from last term or last year that the knowledge has been lodged in their long-term memory. In order to achieve this the pupils need to have already gone through the first 2 stages.

You need to consider what strategies might help pupils to remember for example

- Re-reading material after a key explanation
- Hi-lighting and underlining
- Writing summaries
- Keyword mnemonics with visual imagery.
- Imagery for text-attempting to form images of text materials while listening or reading.
- The diagram below shows 4 of the most popular retrieval methods.

4 Methods of Retrieval Practice

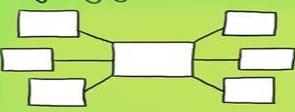
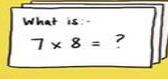
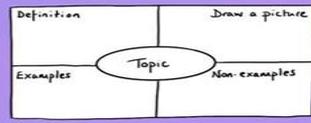
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Before you start put away all your books & classroom materials.

Retrieval Practice Examples

- * Exit Tickets
- * Starter quizzes
- * Multiple choice quizzes
- * Short answer tests
- * Free write
- * Think, pair, share
- * Ranking & sorting
- * Challenge grids

<h3>BRAIN DUMP</h3> <p>Write, draw a picture, create a mind-map on everything you know about a topic.</p>  <p>Give yourself a time limit. Say 3 minutes. then have a look at your books & add a few things you forgot.</p>	<h3>QUIZZING</h3> <p>Create practice questions on a topic. Swap your questions with a partner & answer.</p> <p>Question - What is a metaphor?</p> <ul style="list-style-type: none"> <input type="checkbox"/> A comparison using 'like, as, than'. <input type="checkbox"/> A comparison where one thing is another. <input type="checkbox"/> A comparison with a human attribute.
<h3>FLASHCARDS</h3> <p>Create your own flashcards, question on one side answer on the other. Can you make links between the cards?</p>  <p>You need to repeat the Q&A process for flashcards you fail on more frequently & less frequently for those you answer correctly</p>	<h3>KNOWLEDGE ORGANISERS</h3> <p>Complete a knowledge organiser template for key information about a topic.</p>  <p>You can use knowledge organisers to learn new vocab & make links in between subjects or ideas.</p>

After you have retrieved as much as you can go back to your books & check what you've missed. Next time focus on that missing information

Retrieval activities should be planned into every lesson. We need when planning lessons to consider what knowledge are the pupils retrieving and how are they retrieving it. There are a number of different activities which support effective retrieval in the classroom, these include:

Knowledge quiz/ Retrieval grid

Retrieval practice challenge grid.
What's your score? Starter: write numbers 1-9 in the margin and have go at the quiz.

1 What was the first major church to be replaced following the conquest?	2 Which key word is being defined? 'To demonstrate allegiance to another person publicly.'	3 What did Vesalius discover?
4 What did knights provide for peasants?	5 How many of the 15 cathedrals had been torn down and rebuilt by 1087?	6 Who became Archbishop of Canterbury in 1070?
7 What did James Simpson discover?	8 Which King established the Royal Society?	9 Which Saxon remained Bishop of Worcester from 1062 to 1095?
LAST WEEK (1) 	LAST TOPIC (2) 	FURTHER BACK (3) 

Constructing a schema

Synoptic Planning



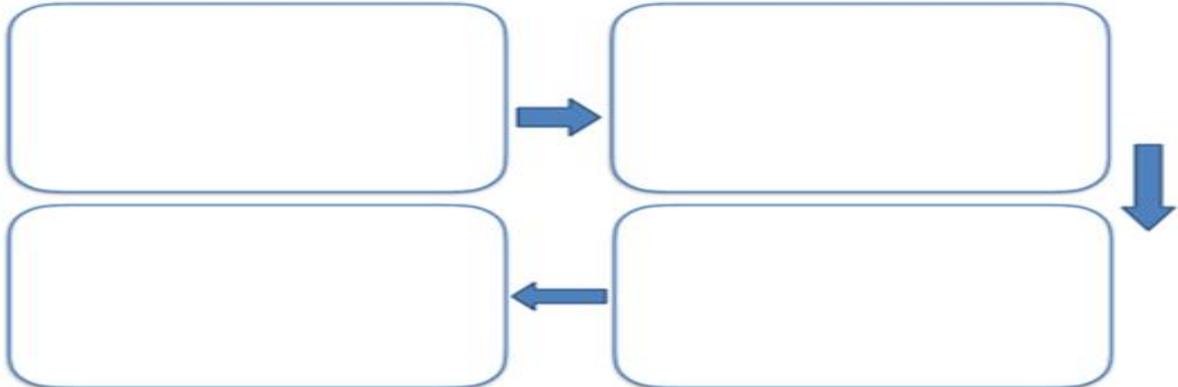
Retrieval relay race



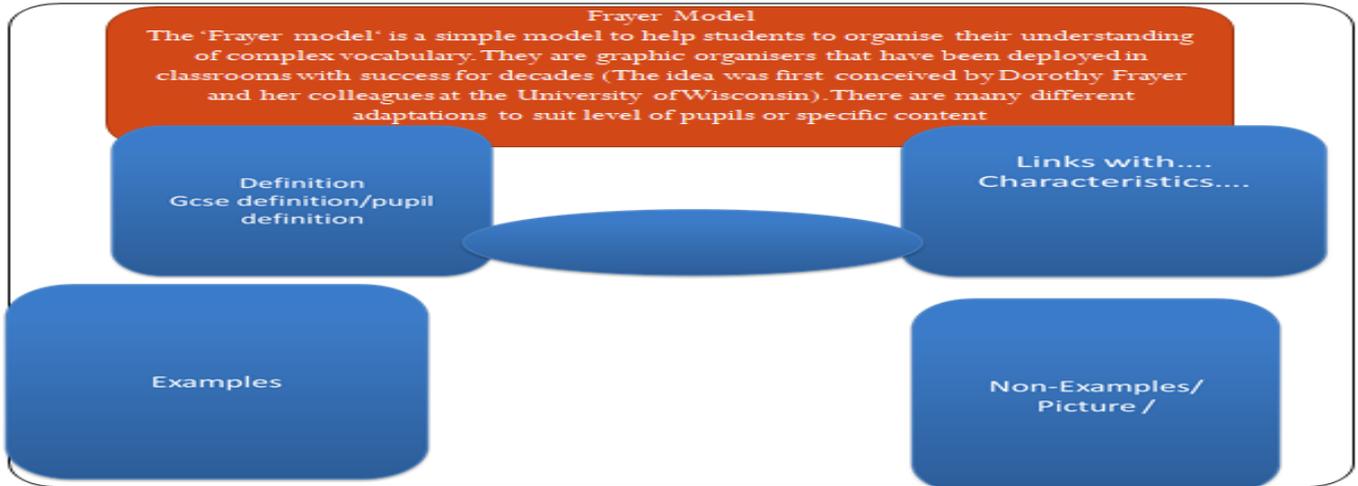
Retrieval Relay Race!



Instructions: In the first box **write as much as you can remember** about our topic. In the second box one of your peers must write what they can recall about our topic **but they cannot repeat any of the information from your first box!** The third box needs to be completed by someone else but again this must include **new information** and the same for the final box.



Frayer model to organise knowledge



Guided reading

Guided Reading

The guided reading model is designed to introduce key concepts, scholars and different faith positions in a sophisticated framework.

Questions are numbered and the numbers are placed in the section of reading where the pupils are asked to extract information.

guided READING

5 What was Pope Francis' position on evolution and the Big Bang (2014)?

6 What does Pope Francis worry that some Catholics imagine about God?

7 What did the First Vatican Council define about the universe?

8 Why was Edwin Hubble and what was his research?

9 Who was George Lemaitre and how did the Church react to him?

10 Who was Stephen Hawking and how did he respond to the Catholic position on God?

CATHOLIC POSITION ON EVOLUTION AND THE BIG BANG
There is a misperception that Catholicism is anti-science...

1 For some Fundamentalists, Christian, the theory of evolution is problematic because it appears to contradict the stories found in the earliest chapters of Genesis. But is the literal approach to Genesis the best approach to understanding the Bible? The various literary genres found in the Bible (Chapters 1-2 of Genesis should be read as a form of revelation. This means they disclose important theological truths about God, namely that God is omnipotent and humans were created in God's image (Gen 1:26).

2 The Catholic Church has tried to resolve tensions between religion and science in 1850, in his encyclical letter *Humani Generis* (On the Human Person). Pope Pius IX expressed concerns about the theory of evolution. He called for more research, but did not condemn the theory. In 1950, Pope John XXIII addressed the issue before the Pontifical Academy of Sciences. He authorized the acceptance of evolution, but reminded his listeners that spiritual questions like the nature of the soul and its relationship to God are beyond the realm of science.

3 The Church has inflexibly defined that the universe was specially created out of nothing. The First Vatican Council defined that Catholics must "confess the world and all things which are contained in it, have been produced by God from nothing. Most people believe that the astronomer Edwin Hubble was the pioneer in early research on this breakthrough. In 1929, Hubble's research on the increasing distances between galaxies showed that the universe is expanding and this fact became the foundation of the Big Bang theory.

4 Francis said Catholics often "risk imagining that God was a magician, with such a magic wand as to be able to do everything" when they think of the creation story. "God is not a magician, but the Creator who gives life to all things." Catholics have long accepted that the creation story as written in the book of Genesis in the Bible can stand along the scientific theory of evolution and that the two do not contradict one another.

5 Pope John Paul II stated: "There is no conflict between evolution and the doctrine of faith." The clear position of the Church is that there should be no fear of science or scientific discovery. In 2014, Pope Francis reinforced this position and also included a letter that the Big Bang can be accepted as the origin of the universe as long as it acknowledged that this was created "loved out" by God.

6 Although Hubble played the crucial role in proving the notion that the universe is expanding, he was not the first scientist to propose the idea of an expanding universe. This idea originated with Georges Lemaitre, a prolific Belgian astronomer and physicist who also happened to be a devout Roman Catholic priest.

7 Many people might expect that the religious authorities of the Catholic Church would have reacted negatively to a priest being heavily involved in the scientific research on the origins of our universe. However, the reality was quite different. Lemaitre's theory supported the Church, because it implied that something existed prior to our universe and that some kind of force was needed for the universe to form from the primordial atom.

8 The Catholic Church embraced Lemaitre's theory as proof that the birth of the universe was the work of God. In contrast, the astronomer Stephen Hawking declared in 2014: "There is no God." Hawking said, "Before we understand science, it is natural to believe that God created the universe. But now science offers a more convincing explanation." Hawking was confident that the universe was **selfish** and firmly rejected the need for a god to be its origin.

Keyword mnemonics - Learning new vocabulary words and facts can be easier when students connect the new information with something that's already familiar to them. The keyword method links a new word or concept to an easily recognized known word that sounds similar. The student creates a visual image depicting this connection, which makes the new information easier to store and retrieve as To help students remember that Olympia is the capital of Washington, assign keywords or keyword phrases to both words. Say the keyword phrase for Washington is "wash-a-ton," and the keyword for Olympia is the Olympics. Your students can think about people at an Olympic event washing a ton of their laundry—an unusual image that will help the new fact "stick."

Retrieval placemat here is an example of what one looks like

<https://www.youtube.com/watch?v=VxkJeltm4KY>

Vocabulary learning grid

Vocabulary Learning grid – Roll dice twice and come up with key words connected to our topic beginning with...

6	A	J	I	D	F	B
5	H	K	B	W	R	I
4	Y	J	O	F	S	U
3	L	C	A	M	T	N
2	G	O	V	P	C	D
1	R	Z	S	E	S	T
	1	2	3	4	5	6

Memory dumps. Here's a small strategy that makes a big impact on student learning – based on decades of cognitive science research. In scientific lingo, we call it "**free recall.**"

Free recall is also known as a "**brain dump,**" "show what you know," and a "stop and jot." No matter what you call it, try this quick retrieval strategy during your instruction before the end of the school year. Here's how it works:

- Pause your lesson, lecture, or activity.
- Ask students to write down everything they can remember.
- Continue your lesson, lecture, or activity.

<https://www.retrievalpractice.org/strategies/2017/free-recall>

Not all of them will be relevant for all subjects. This is not an exhaustive list but some of the more commonly used examples. Retrieval activities should always be subject appropriate and help build a detailed knowledge of key facts which are used across all the key stages.

Appendix 6

Adaptive teaching

Pupils are likely to learn at different rates and so will require different levels of support from both you and any other professional eg. Teaching assistants who support the class. In order to plan effectively you need to know your class and understand their different levels of prior knowledge and any potential barriers to learning the pupils may have. You must have high expectations of all the pupils in your class and ensure that all pupils have access to a rich curriculum.

Adaptive teaching is not about having different tasks or learning outcomes for different pupils, it is how you provide targeted support to pupils who may be struggling with either the concepts, knowledge or skills being explored in the lesson.

In order to successfully adapt your teaching, you first need a good understanding of the pupils in the class and have identified any barriers to learning the pupils may have. You can then use this information when designing the learning objectives and learning episodes of your lesson. During the lesson you will need to adapt how you approach certain knowledge so that you ensure **all pupils** have the opportunity to meet the lesson objectives and outcomes. You need to carefully balance the input of new content and use retrieval and interleaving techniques to help the pupils master the important concepts.

Support and challenge

There are many ways in which to use adaptive approaches for learning in the classroom to support and challenge all learners (this is key to an inclusive curriculum). The following are strategies/approaches that can be adopted in planning:

Adaptive teaching approaches...

Curriculum design (short, medium and long term planning)	Classroom management / organisation (layout of room, seating plans, etc.)	Learning outcome (i.e. expectations of achievement / attainment)
Learning activity/task Appropriate for all pupils Consider Rosenshines principles	Resource (open or structured, e.g. writing frames)	Grouping (ability, mixed, gender, friendship, etc.)
Teacher intervention (modelling, explaining, questioning, etc.)	'Other adult' intervention (learning assistant, technician, etc.)	Outcome (what pupils produce, demonstrate, etc.)

The following is a list of useful techniques and activities to support adaptive teaching and learning:

C3B4Me: Get pupils to use each other as resources and experts in the field. Pupils should see three other pupils (C3) before asking the teacher (B4Me).

Card sorts: by introducing pupils to information in a format that they can move, order and prioritise easily. Card sorts often create discussion between pairs working on sorting the information.

Challenging questions: use them as target questions for identified pupils (in your planning) or as group or class challenges.

Diagrams and visual images: displaying visual images to support complex written or verbal explanations.

Extension activities: create an 'I Bet You Can't Answer This' or 'Beat the Teacher' question for those who finish the work set. Ensure it contributes to meeting the learning outcome for the lesson and that it deepens or broadens knowledge and understanding.

Formative Assessment: Using formative assessment to quickly determine the level of understanding of individual pupils

Grouping within class: this may be based on similar ability, mixed ability, expertise, friendship, etc. or using school strategies such as Kagan groupings.

Key word discussion: before getting pupils to write using key words, get them to use them in discussion first – this builds confidence in using them accurately.

Modelling: this can be done by sharing an example of pupils' work to demonstrate the expectation you have or you can model an answer highlighting use of key words, success criteria, etc.

Noughts and crosses: design a noughts and crosses board with a different activity / question in each section. Pupils then select the activities that will give them three in a row. Activities should have a range of challenge in them so all pupils are challenged by the activity. Those pupils who take the easy option this time should be encouraged / directed to take a more challenging route next time.

Peer teaching: create opportunities for pupils to teach each other – by doing so they are more likely to retain what they have been learning about, it also has the added bonus of pupils using accessible language for other pupils to understand and you can learn from this when planning your own teaching.

Stepped activities: increasing challenging activities for pupils to progress through. This can be motivational for higher attaining pupils to reach the 'top' of the ladder but equally can be demotivating for those pupils who feel they will never achieve the top steps.

Student interests: use your knowledge of the pupils in your care and their cultural interests to select your examples and illustrations in your teaching for best engagement and interest.

Teacher input / support: this could be a variety of activities such as, checking understanding, listening to a discussion and prompting or questioning when needed, supporting pupils to problem solve, setting different levels of questioning, etc.

Thinking time: some pupils can quickly respond to questions in the classroom whereas others take longer to process and consider the question. Build in wait time (for you and them) before accepting answers. Consider a no hands rule so that all pupils are ready to respond rather than the class leaving the answer to the quick thinkers with their hands up.

Work format: presenting the information for the lesson in an accessible format for pupils, e.g. large print for pupils with visual impairment, illustrated version for pupils with English as an Additional Language (EAL).

Writing frames: support students with their writing by creating a frame for each section or paragraph of their written response. This can be used in conjunction with modelling an answer or using a pupil's previous piece of work to illustrate the expectation.

Written guidance: often a support sheet for the task at hand e.g. sentence starters, a list of the steps in the process being undertaken, key words being used in the lesson and their meanings (include images with meanings for pupils who have English as an Additional Language). You can laminate these and call them 'learning mats'.

Compiled using:

Capel, Leask and Turner (2009). *Learning to Teach in the Secondary Classroom* (fifth edition). Abingdon: Routledge.
Times Educational Supplement (TES) website - <https://www.tes.com/teaching-resource/the-differentiation-deviser-6233159>

Appendix 7

Assessment Records

Student teachers can use the LJMU electronic mark book (Figure 9), follow their Home School format or create their own assessment records. These can be either paper (Figure 10) based or electronic.

Figure 9 LJMU electronic mark book (spreadsheet)

