

**Science Subject Leaders**

**Work Book**

****

**Name: ……………………………………………………….**

**School: ……………………………………………………….**

**LA / Trust: ……………………………………………………….**

**Date: ……………………………………………………….**



**Science Subject Leaders Work Book**

This, and subsequent resource work books, have been designed specifically to support the work of subject leaders in primary schools as they keep a record of both their actions and the outcomes of these actions.

This Science Subject Leaders Work Book is the companion document to the Science Subject Leaders Resource File.

*(There are subject leaders resource files & work books for the following subjects: Art & Design; Computing; English; Design & Technology; Geography; History; Mathematics; MfL; Music; PE; PSHE and Science.)*

The structure of each work-book follows the same format:

***Part A: subject leader audit questions Pages 3-4***

***Part B: snapshot www/ebi for Science Page 5***

***Part C: Statement of curriculum intent Page 6***

***Part D: Science & cultural capital Page 7***

***Part E: Subject leaders response to Ofsted’s April 2021, research report into Science Pages 8 - 13***

***Part F: Annual monitoring calendar Pages 23 - 28***

***Part G: Science Self-Evaluation report Pages 22 - 25***

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***Part I: Subject leaders development plan Page 31***

***Part J: Meeting the needs of pupils with SEND Pages 32 - 39***

**Part B: Subject leaders audit: Science**

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Notes** | **Completed** | **Date** |
| Am I clear about the N.C. Aims for Science? |  |  |  |
| Have I checked out the subject association website to identify resources for:  \* Me, as the subject leader  \* Teachers / assistants |  |  |  |
| Have I completed an audit of my own K, S & U against these aims? |  |  |  |
| Have I identified sources to support me in my own subject knowledge? |  |  |  |
| Have I written a statement of Intent for Science? |  |  |  |
| In writing the statement of Intent, did I refer to paragraph 179 of D-D Resource 1? |  |  |  |
| Re: Para: 179, do I have a written response for each of the 5 bullet points? |  |  |  |
| Has this statement been approved by HT / SLT / all staff? |  |  |  |
| Have I developed a monitoring calendar so that I am able to build up an accurate and up-to-date overview of the www/ebi in T, L & A for Science? |  |  |  |
| Have I clarified with my line manager what good / better T, L & A in Science ‘looks’ like? (and hence what is not yet ‘good’ enough) |  |  |  |
|  |  |  |  |
| **Supplementary questions:** |  |  |  |
| How long have I been the subject leader for Science, and what support (CPD) have I received either internally or externally? |  |  |  |
| What resources do I use to support me as a subject leader? |  |  |  |
| How have I designed the Science curriculum? |  |  |  |
| What am I trying to achieve through the Science curriculum? |  |  |  |
| What scheme of learning does the school follow (published or your own)? |  |  |  |
| How is this subject taught, and why? |  |  |  |
| How do children progress in this subject from one year to the next? *(Remember that* ***progress is knowing more, remembering more and being able to do more****.)* |  |  |  |
| How do you ensure that pupils retain their subject knowledge? |  |  |  |
| How do you ensure that pupils with SEND (as well as those entitled to Pupil Premium) benefit from the curriculum in this subject? |  |  |  |
| What would you expect an inspector to see when they visit Science lessons and speak to the pupils? |  |  |  |
| How do teachers clarify any misconceptions by pupils? |  |  |  |
| What links are made between Science and other subjects does – can you give an example of where this works particularly well? |  |  |  |
| Can you tell of any examples where you have supported other teachers / assistants in subject X and the impact that this has had on their teaching / pupils’ learning? |  |  |  |



**Part B: Initial subject self-evaluation proforma Date:**

This is a basic self-evaluation proforma in order for the subject leader to gain a brief overview of strengths and areas for improvement possibly prior to undertaking a more comprehensive review and monitoring process.

|  |
| --- |
| **Summary** |
| The key strengths in: |
| ***Teaching, learning & assessment in Science are:*** |
| ***The Science Curriculum are:*** |
| The main areas we need to develop in: |
| ***Teaching, learning & assessment in Science are:*** |
| ***The Science curriculum are:*** |

**Signed: ………………………………….. Date: ………………………………….**



**Part C: Statement of curriculum intent**

**From the Ofsted Education Inspection Framework (EIF)**

***Intent***

***Para: 196.***

In evaluating the school’s educational intent, inspectors will primarily consider

the curriculum leadership provided by school, ***subject and curriculum leaders.***

***Para: 197.***

The judgment focuses on factors that both research and inspection evidence

indicate contribute most strongly to an effective education and pupils achieve

highly. These factors are listed below.

*◼ The school’s curriculum is rooted in the solid consensus of the school’s leaders about the knowledge and skills that pupils need in order to take advantage of opportunities, responsibilities and experiences of later life. In this way, it can powerfully address social disadvantage.*

*◼ It is clear what end points the curriculum is building towards and what*

*pupils need to know and be able to do to reach those end points.*

*◼ The school’s curriculum is planned and sequenced so that new knowledge*

*and skills build on what has been taught before and towards its clearly*

*defined end points.*

*◼ The curriculum reflects the school’s local context by addressing typical gaps*

*in pupils’ knowledge and skills.*

***Science: Statement of Intent (School name):***



**Part D: Science & cultural capital**

**From the Ofsted Education Inspection Framework (EIF)**

***Cultural capital***

***Para:203.***

As part of making the judgement about the quality of education, inspectors will consider the extent to which schools are equipping pupils with the knowledge and cultural capital they need to succeed in life. Our understanding of ‘knowledge and cultural capital’ is derived from the following wording in the national curriculum:

*‘It (Cultural capital) is the essential knowledge that pupils need to be educated citizens, introducing them to the best that has been thought and said and helping to engender an appreciation of human creativity and achievement.’*

**How Science at (School x) contributes to the development of pupil’s cultural capital**



**Part E: Subject leaders response to the Ofsted April 2021 research review series: report**

<https://www.gov.uk/government/publications/research-review-series-science/research-review-series-science>

### High-quality science education may have the following features

## Curriculum progression: what it means to get better at science

|  |  |
| --- | --- |
| **Main findings** | **My commentary** |
| *The curriculum is planned to build increasingly sophisticated knowledge of the products (substantive knowledge) and practices (disciplinary knowledge) of science.* |  |
| *Disciplinary knowledge (identified in the ‘working scientifically’ sections of the national curriculum) comprises knowledge of concepts as well as procedures.* |  |
| *When pupils develop their disciplinary knowledge, they learn about the diverse ways that science generates and grows knowledge through scientific enquiry. This is not reduced to a single scientific method or taken to mean just data collection.* |  |
| *The curriculum outlines how disciplinary knowledge advances over time and teaches pupils about the similarities and differences between each science.* |  |
| *Pupils are not expected to acquire disciplinary knowledge simply as a by-product of taking part in practical activities. Disciplinary knowledge is taught.* |  |
| *Scientific processes such as observation, classification or identifying variables are always taught in relation to specific substantive knowledge. They are not seen as generalisable skills.* |  |
| **What do I need to do next** |  |

**Organised knowledge within the curriculum**

|  |  |
| --- | --- |
| ***Main findings*** | ***My commentary*** |
| *In the early years, pupils are introduced to a wide-ranging vocabulary that categorises and describes the natural world. These words are not too technical but provide the ‘seeds’ for developing scientific concepts that will be built on in later years.* |  |
| *Attainment targets, specification points and the EYFS educational programmes are broken down into their component knowledge.* |  |
| *Substantive knowledge is sequenced so that pupils build their knowledge of important concepts such as photosynthesis, magnetism and substance throughout their time at school.* |  |
| *Knowledge is sequenced to make the deep structure of the scientific disciplines explicit. This allows teachers and pupils to see how knowledge is connected.* |  |
| *Disciplinary knowledge is sequenced to take account of:*  *its hierarchical structure*  *the best substantive contexts in which to teach it.* |  |
| *Once disciplinary knowledge is introduced, it is used and developed in a range of different substantive contexts.* |  |
| *Planning for progression takes account of what is taught in other subjects. For example, the science curriculum should be coherent with what is taught in mathematics. Where there are differences, these are made explicit to pupils and teachers.* |  |
| ***What do I need to do next*** |  |

**Other curricular considerations**

|  |  |
| --- | --- |
| ***Main findings*** | ***My commentary*** |
| *Sufficient curriculum time is allocated for pupils to embed what they have learned in long-term memory through extensive practice before moving on to new content.* |  |
| *The component knowledge pupils need in order to read, write, represent and talk science is identified and sequenced.* |  |
| *Curriculum plans consider how component knowledge introduced at one point in time influences future learning. This ensures that knowledge builds incrementally from pupils’ prior knowledge and so pupils’ misconceptions are less likely.* |  |
| *The curriculum anticipates where pupils are likely to hold misconceptions. These are explicitly addressed, and pupils learn how the misconception is different to the scientific idea.* |  |
| *Pupils know when and why models and rules can be used in science, which includes knowing what they can and cannot be used for.* |  |
| ***What do I need to do next*** |  |

**Curriculum materials**

|  |  |
| --- | --- |
| ***Main findings*** | ***My commentary*** |
| Online resources match what the curriculum is intending pupils to learn and are not a source of errors/misconceptions. |  |
| If science kits are used, they help achieve the curriculum intent and the activities themselves do not become the curricular goal. |  |
| High-quality textbooks are used as an important resource for learning and teaching science. |  |
| ***What do I need to do next*** |  |

**Practical work**

|  |  |
| --- | --- |
| ***Main findings*** | ***My commentary*** |
| *The curriculum is sequenced so that pupils have the necessary disciplinary and substantive knowledge to carry out practical work successfully and learn from it.* |  |
| *The purpose of practical work is clear in relation to curriculum content so that practical activities can be set up and managed to develop pupils’ disciplinary and/or substantive knowledge.* |  |
| *Practical activities form part of a wider instructional sequence that gives pupils time to connect theory to observation.* |  |
| *Pupils are not expected to learn disciplinary knowledge only through taking part in practical work – disciplinary knowledge should be taught using the most effective methods.* |  |
| *Pupils encounter the full range of objects and phenomena they are studying through both laboratory and fieldwork. These encounters should take pupils beyond their everyday experiences to develop a sense of wonder and curiosity about the material world.* |  |
| ***What do I need to do next*** |  |

**Pedagogy: the teaching of science**

|  |  |
| --- | --- |
| ***Main findings*** | ***My commentary*** |
| *Activities are carefully chosen so that they match specific curriculum intent.* |  |
| *Teachers use systematic teaching approaches, where learning is scaffolded using carefully sequenced explanations, models, analogies and other representations to help pupils to acquire, organise and remember scientific knowledge.* |  |
| *Teaching takes account of the limited working-memory capacity of their pupils when planning lessons.* |  |
| *Pupils are not expected to arrive at scientific explanations by themselves without sufficient prior knowledge.* |  |
| *Systematic approaches, alongside carefully selected texts, are used to teach the most important vocabulary in science.* |  |
| *Pupils have regular opportunities in the early years and primary classrooms to learn vocabulary through story and non-fiction books, rhymes, songs and oral rehearsal.* |  |
| ***What do I need to do next*** |  |

**Assessment**

|  |  |
| --- | --- |
| ***Main findings*** | ***My commentary*** |
| *Teachers and pupils are clear on the purpose of assessment. There is clarity about what is being assessed.* |  |
| *Assessment is not overly burdensome on teachers’ time in relation to marking, recording or feedback.* |  |
| *Feedback is focused on the science content and not on generic features. Teachers have sufficient subject knowledge to be able to do this.* |  |
| *Pupils regularly retrieve knowledge from memory to help them remember and organise their knowledge. This is coupled with feedback. Teachers think carefully about what pupils are being asked to retrieve and whether this prioritises the most important content.* |  |
| *Overuse of external assessment items, such as GCSE or A-level questions, is avoided because this narrows the curriculum and leads to superficial progress that does not prepare pupils for further study.* |  |
| *Systems are in place to support teachers to make accurate decisions when assessing pupils’ work. This includes supporting primary teachers with statutory teacher assessment of science at key stages 1 and 2.* |  |
| ***What do I need to do next*** |  |

**Systems at subject and school level**

|  |  |
| --- | --- |
| ***Main findings*** | ***My commentary*** |
| *Teachers, teaching assistants and technicians have access to high-quality subject-specific CPD to develop subject knowledge and pedagogical content knowledge. This is aligned to the curriculum.* |  |
| *In primary schools, there is at least one teacher who specialises in teaching science and science leaders have dedicated leadership time.* |  |
| *Science teachers engage with subject associations, and take responsibility, with support from the school, for developing their own subject knowledge throughout their career.* |  |
| *Early-stage teachers in particular have timetables that allow them to develop expertise in one science and that do not give them too many key stages to teach.* |  |
| *Timetables allocate appropriate teaching time to science, reflecting its status as a core subject in the national curriculum. There are particular concerns that pupils in some primary schools are not receiving sufficient curriculum time to learn science.* |  |
| *Pupils have access to sufficient practical resources to take part in demanding practical work, either independently or in appropriately sized groups that enable first-hand experiences.* |  |
| ***What do I need to do next*** |  |



**Part F: Annual monitoring calendar**

1. ***Exemplar calendar***
2. ***Your version***
3. ***Checklist: groups***
4. ***Annual overview***
5. **Evidence collected against NC Aims**

**i) Exemplar calendar**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Learning Observation** | **Pupil Voice \* suggest doing this as the same time as ‘pupil work’** | **Pupil work** | **ANO** |
| **September** | xxx | week 3/4: talk to pupils about experiences in subject last year | if new to post, search out pupils work from previous year to get an overview of learning against the subjects NC Aims | meet with teachers to clarify  ‘understanding’ of NC Aims / expectations for end of topic ‘goals’ |
| **October** | learning walk in EY / KS1 / L & U KS2 (e.g. visits to YN, Y2, 4 & 6) | talk to pupils\* in those classes you’ve visited | **\*** always try to talk to pupils with ‘samples’ of their learning with them | always feedback the www/ebi from any monitoring / review activities |
| **November** | learning observations in e.g. a selection of YR, 1, 3 & 5) | ditto above | ditto above | ditto above |
| **December** | xxx |  |  | Gather feedback from Teachers from Term 1 (re: www/ebi)  Prepare termly update of www/ebi’s *(for feeding back to HT/SLT (and possibly linked GB representative))* |
| **January** | xxx | talk to pupils about experiences in subject last term |  | meet with teachers to clarify  ‘understanding’ of NC Aims / expectations for end of topic ‘goals’ |
| **February** | learning walk in EY / KS1 / L & U KS2 (e.g. visits to YR, Y1, 3 & 5) (*check whether the www/ebi from term 1 are the same / improving..)* | talk to pupils\* in those classes you’ve visited | **\***always try to talk to pupils with ‘samples’ of their learning with them |  |
| **March** | learning observations in e.g. a selection of YN, 2, 4 & 6) (*check whether the www/ebi from term 1 are the same / improving..)* | talk to pupils\* in those classes you’ve visited | **\***always try to talk to pupils with ‘samples’ of their learning with them |  |
| **April** |  |  |  | Gather feedback from Teachers from Term 2(re: www/ebi)  Prepare termly update of www/ebi’s |
| **May** | follow-up learning observations / walks to assess whether the www’s are still www’s and whether any ebi’s have moved in the direction of a www | talk to pupils\* in those classes you’ve visited | **\***always try to talk to pupils with ‘samples’ of their learning with them |  |
| **June** | follow-up learning observations / walks to assess whether the www’s are still www’s and whether any ebi’s have moved in the direction of a www | talk to pupils\* in those classes you’ve visited | **\***always try to talk to pupils with ‘samples’ of their learning with them | Gather feedback from Teachers from Terms 1-3 (re: www/ebi) |
| **July** |  |  |  | Gather feedback from Teachers from Terms 1-3 (re: www/ebi)  Complete subject self-evaluation report / action plan for the next academic year  *(share with HT/SLT (and possibly also linked GB representative)* |



**ii) Your version**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Learning Observation** | **Pupil Voice \* suggest doing this as the same time as ‘pupil work’** | **Pupil work** | **ANO** |
| **September** |  |  |  |  |
| **October** |  |  |  |  |
| **November** |  |  |  |  |
| **December** |  |  |  |  |
| **January** |  |  |  |  |
| **February** |  |  |  |  |
| **March** |  |  |  |  |
| **April** |  |  |  |  |
| **May** |  |  |  |  |
| **June** |  |  |  |  |
| **July** |  |  |  |  |

**iii) Checklist:** Have I included as many as possible of the following ‘groups’ of pupils?

|  |  |  |
| --- | --- | --- |
| **Group** | **When** | **Who** |
| **EYFS** |  |  |
| **KS1** |  |  |
| **KS2 (lower)** |  |  |
| **KS2 (Upper)** |  |  |
| **LAP / MAP / HAP** |  |  |
| **DA / non DA** |  |  |
| **Pupils with SEND** |  |  |
| **EAL pupils** |  |  |
| ***(what other ‘groups’ do you need to focus on?)*** |  |  |

**iv) Annual overview**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Learning Observation** | **Pupil Voice** | **Pupil work** | **ANO** |
| **September** |  |  |  |  |
| **October** |  |  |  |  |
| **November** |  |  |  |  |
| **December** |  |  |  |  |
| **January** |  |  |  |  |
| **February** |  |  |  |  |
| **March** |  |  |  |  |
| **April** |  |  |  |  |
| **May** |  |  |  |  |
| **June** |  |  |  |  |
| **July** |  |  |  |  |

1. **Evidence collected against NC Aims**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NC Aims** | **How science works**  **(Scientific enquiry)** | **Organisms, their behaviour and the environment** | **Materials, their properties and the earth** | **Energy, forces and space** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NC Aims** | **How science works**  **(Scientific enquiry)** | **Organisms, their behaviour and the environment** | **Materials, their properties and the earth** | **Energy, forces and space** |
| **YN www** |  |  |  |  |
| **YN ebi** |  |  |  |  |
| **YR www** |  |  |  |  |
| **YR ebi** |  |  |  |  |
| **Y1 www** |  |  |  |  |
| **Y1 ebi** |  |  |  |  |
| **Y2 www** |  |  |  |  |
| **Y2 ebi** |  |  |  |  |
| **Y3 www** |  |  |  |  |
| **Y3 ebi** |  |  |  |  |
| **Y4 www** |  |  |  |  |
| **Y4 ebi** |  |  |  |  |
| **Y3 www** |  |  |  |  |
| **Y3 ebi** |  |  |  |  |
| **Y4 www** |  |  |  |  |
| **Y4 ebi** |  |  |  |  |

**Monitoring Calendar B (Summary)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NC Aims** | **How science works**  **(Scientific enquiry)** | **Organisms, their behaviour and the environment** | **Materials, their properties and the earth** | **Energy, forces and space** |
| **YN** |  |  |  |  |
| **YR** |  |  |  |  |
| **Y1** |  |  |  |  |
| **Y2** |  |  |  |  |
| **Y3** |  |  |  |  |
| **Y4** |  |  |  |  |
| **Y5** |  |  |  |  |
| **Y6** |  |  |  |  |

**Overall Summary**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NC Aims** | **How science works**  **(Scientific enquiry)** | **Organisms, their behaviour and the environment** | **Materials, their properties and the earth** | **Energy, forces and space** |
| **www** |  |  |  |  |
| **Ebi** |  |  |  |  |



**Part G: Science: Quality of Education (Good)**

This is the authors initial interpretation of a best-fit between the previous subject criteria and the current (2021) QoE (2021) criteria **(See Subject Leaders Resource File for this information)**.

|  |  |  |
| --- | --- | --- |
| ***INTENT*** | | |
| **NEW HANDBOOK** | **EVIDENCE** | **OLD SUBJECT CRITERIA** |
| Leaders adopt or construct a curriculum that is ambitious and designed to give all pupils, particularly disadvantaged pupils and including pupils with SEND, the knowledge and cultural capital they need to succeed in life. This is either the national curriculum or a curriculum of comparable breadth and ambition. [*If this is not yet fully the case, it is clear from leaders’ actions that they are in the process of bringing this about.]* |  | Leaders are well informed by current developments in the subject and are aware of developments in science education, including in other schools and by national agencies and associations.  The curriculum is broad, balanced and well informed by current research and development in science education. It meets the learning needs of all groups of pupils and ensures effective continuity and progression, including in scientific enquiry and pupils’ understanding of how science works. |
| The school’s curriculum is coherently planned and sequenced towards cumulatively sufficient knowledge and skills for future learning and employment. *[If this is not yet fully the case, it is clear from leaders’ actions that they are in the process of bringing this about.]* |  | Planned experiences for learning promote progress within and between year groups, and maintain a good balance between all four areas of the science National Curriculum. In primary schools, the key ideas are regularly reinforced over time through practical work. In secondary schools, sufficient time and high-quality practical resources to teach science through practical investigation and illustration are provided, with the result that students are motivated to study the subject further at 16 and 18.  Good advice and guidance on progression in science beyond compulsory education is embedded in the curriculum, and pathways do not limit progression, particularly if vocational subjects are taken at Key Stage 4. |
| The curriculum is successfully adapted, designed or developed to be ambitious and meet the needs of pupils with SEND, developing their knowledge, skills and abilities to apply what they know and can do with increasing fluency and independence. *[If this is not yet fully the case, it is clear from leaders’ actions that they are in the process of bringing this about.]* |  |  |

|  |  |  |
| --- | --- | --- |
| ***IMPLEMENTATION*** |  |  |
| **NEW HANDBOOK** | **EVIDENCE** | **OLD SUBJECT CRITERIA** |
| Teachers have good knowledge of the subject(s) and courses they teach. Leaders provide effective support for those teaching outside their main areas of expertise. |  | Teachers have a clear understanding of progression in science skills, knowledge and understanding and how the ‘big ideas’ of science can be understood through increasingly demanding details and concepts. As a result, they use an appropriate range of resources and teaching strategies to promote good learning across all aspects of the subject.  There are shared common purposes among those involved in teaching science. Teachers have good opportunities to share practice among themselves and have access to subject training within and beyond the boundaries of the school, where appropriate. Science reflects wider whole-school priorities including consistent application of literacy and numeracy policies. |
| Teachers present subject matter clearly, promoting appropriate discussion about the subject matter being taught. They check pupils’ understanding systematically, identify misconceptions accurately and provide clear, direct feedback. In so doing, they respond and adapt their teaching as necessary without unnecessarily elaborate or individualised approaches. |  | Teachers give pupils many opportunities to show and apply their own knowledge, skills and understanding of science, and give extended explanations.  Pupils enjoy science and apply themselves well. They are able to explain the subject’s value and show an appreciation of the impact of science on society, themselves and its contribution to life in a technological age. |
| Over the course of study, teaching is designed to help pupils to remember long term the content they have been taught and to integrate new knowledge into larger ideas. |  | They research science issues using different sources of information. They demonstrate some originality in their approach, coming up with new ideas on how to tackle a problem or display data. They show imagination in forming hypotheses and in the way they go about their science work.  They show confidence and competence in the full range of stage-appropriate practical work, including planning and carrying out science investigations in groups or individually. |
| Teachers and leaders use assessment well, for example to help pupils embed and use knowledge fluently, or to check understanding and inform teaching. Leaders understand the limitations of assessment and do not use it in a way that creates unnecessary burdens on staff or pupils. |  | Pupil progress in science is tracked during the year with feedback from this used to drive intervention and extension activities. |
| Teachers create an environment that focuses on pupils. The textbooks and other teaching materials that teachers select – in a way that does not create unnecessary workload for staff – reflect the school’s ambitious intentions for the course of study. These materials clearly support the intent of a coherently planned curriculum, sequenced towards cumulatively sufficient knowledge and skills for future learning and employment. |  | Pupils use their scientific knowledge and understanding well in most situations to give accurate explanations or solve challenging problems requiring appropriate control of several variables, and report their findings clearly using accurate scientific language. |
| The work given to pupils is demanding and matches the aims of the curriculum in being coherently planned and sequenced towards cumulatively sufficient knowledge. |  | Pupils regularly work independently, often taking the initiative in individual work and when working with others. |
| Reading is prioritised to allow pupils to access the full curriculum offer. |  |  |
| A rigorous and sequential approach to the reading curriculum develops pupils’ fluency, confidence and enjoyment in reading. At all stages, reading attainment is assessed and gaps are addressed quickly and effectively for all pupils. Reading books connect closely to the phonics knowledge pupils are taught when they are learning to read. |  |  |
| The sharp focus on ensuring that younger children gain phonics knowledge and language comprehension necessary to read, and the skills to communicate, gives them the foundations for future learning. |  |  |
| Teachers ensure that their own speaking, listening, writing and reading of English support pupils in developing their language and vocabulary well. |  |  |

|  |  |  |
| --- | --- | --- |
| ***IMPACT*** |  |  |
| **NEW HANDBOOK** | **EVIDENCE** | **OLD SUBJECT CRITERIA** |
| Pupils develop detailed knowledge and skills across the curriculum and, as a result, achieve well. This is reflected in results from national tests and examinations that meet government expectations, or in the qualifications obtained. |  | They show confidence and competence in the full range of stage-appropriate practical work, including planning and carrying out science investigations in groups or individually.  Pupils use their scientific knowledge and understanding well in most situations to give accurate explanations or solve challenging problems requiring appropriate control of several variables, and report their findings clearly using accurate scientific language.  Pupils enjoy science and apply themselves well. They are able to explain the subject’s value and show an appreciation of the impact of science on society, themselves and its contribution to life in a technological age. |
| Pupils are ready for the next stage of education, employment or training. They have the knowledge and skills they need and, where relevant, they gain qualifications that allow them to go on to destinations that meet their interests and aspirations and the intention of their course of study. Pupils with SEND achieve the best possible outcomes. |  | Over time, the proportion of male and female pupils that progress to post-16 science studies is similar to the proportions nationally. |
| Pupils’ work across the curriculum is of good quality. |  | Opportunities to promote spiritual, moral, social and cultural development are systematically planned and delivered to ensure every pupil benefits. |
| Pupils read widely and often, with fluency and comprehension appropriate to their age. They are able to apply mathematical knowledge, concepts and procedures appropriately for their age. |  | Good links are forged with other subjects and the wider community to provide a range of enrichment activities that promote pupils’ learning and engagement with science. |



**Part H: CPD Log**

1. **CPD I have attended**

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Title** | **Provider** | **Actions** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

1. **CPD I have delivered**

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Title** | **Who to** | **Impact / feedback** |
|  |  |  |  |
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**Part H: Subject leader development plan**

***Subject: ………………………………….***

***Subject Leader: ………………………………….***

***Academic year: ………………………………….***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date** | **Target** | **Record of actions taken** | **Impact / evaluation** | **Target achieved (& date)** |
| **Autumn Term** |  |  |  |  |
| **Spring Term** |  |  |  |  |
| **Summer Term** |  |  |  |  |
| **End of year summary** |  |  |  |  |

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***Part J: Meeting the needs of pupils with SEND***

***Notes taken from***

**Teacher Handbook SEND – Embedding inclusive practice (January 2024)**

**(**[**https://nasen.org.uk/resources/teacher-handbook-send**](https://nasen.org.uk/resources/teacher-handbook-send)**)**

**Planning inclusive lessons**

* In the first instance the purpose, process and products of the lesson (the learning journey/intent) need to be clearly articulated to learners and time taken to ensure all learners understand the journey ahead.
* Connection making can reduce a learner’s fear of the unknown and can make them more ready to engage in the learning.
* Always present connections in a clear manner, verbally and visually; some learners will likely require a scaffold, for example a visual representation or key vocabulary, in their books that they can refer to at the start of each lesson.
* As all foundation subjects are often only an hour or so a week (out of 25 hours of lessons), some learners are likely to need a reminder of what they are learning about at the start of a lesson, and where it sits within the learning sequence as well as where it sits in relation to other relevant subject specific contexts and knowledge that it is building upon, prior to a whole-class retrieval starter activity.

When planning inclusive lessons, teachers need to consider how they can enable pupils to engage with the new learning:

* Are you connecting previous learning - are there prior skills or knowledge that learners can build on in this unit of study?
* Are there key words whose meanings they need to be able to understand in order to be able to engage with the core concepts being taught?
* Are there pre-requisite skills or knowledge that are required to be successful, e.g. in **History:** do pupils need a clear understanding of the difference between primary & secondary sources?

**Task:**

* *Have you identified the key subject specific words for each of the topics that pupils will learn during each year and how/when are these made available to pupils?*
* *What subject specific skills will pupils need to know and understand prior to the start of each new topic? And how will you ensure that pupils will be able to practice these?*
* Explicit instruction needs to be carefully planned for learners with SEND.
* New material needs to be delivered in small steps, with teachers considering how much information is presented at any one time.
* All new material should be presented both verbally and visually (dual-coded) wherever possible.
* High-interest, engaging materials such as images or short documentary clips can provide a strong start to a lesson, e.g. in **Geography** a short clip of an erupting volcano can help learners begin to understand the impact of an eruption the surrounding area.

**Task:**

* *Have you identified for each topic ‘high-interest, engaging materials’ that will be accessible to all pupils?*
* Less confident learners will benefit from having access to content of a time period prior to reading as this can motivate and support them when working through what may for them be challenging texts.

**Task:**

* *How do you make available to all pupils resources to support them prior to the introduction of each new topic?*

**Modelling and scaffolding are key components of an inclusive lesson.**

* Learners benefit from seeing the teacher model the application of for e.g. in **Art & Design** of skills in connection with subject content and watching a teacher perform ‘live’ research and live writing.
* A teacher / assistant ‘thinking aloud’ whilst modelling writing tasks can support learners when they progress to independent practice.
* Modelling should be a planned part of every lesson, with further modelling and/or scaffolding as needed when identified through formative assessment in a lesson.
* Given that for almost all foundation subjects, lessons are usually spread apart over a week/fortnight, it is crucial that new learning is recapped at the start of the following lesson. Teachers should also ensure, wherever possible, to address any misconceptions within that lesson. Misconceptions that are observed through marking between lessons can be addressed through short videos uploaded on a virtual classroom between lessons and/or at the start of the next lesson.
* For some learners with additional learning needs, misconceptions can become embedded in their understanding, impacting further progression. It is therefore vital that misconceptions are addressed directly at the earliest possible stage. It will often be beneficial to address these misconceptions in small groups or with individuals to check understanding.

**Task:**

* *Have you identified what ‘may be’ the common misconceptions that teachers and assistants need to be aware of prior to the start of each new topic? (e.g. in* ***Geography*** *it’s not uncommon for pupils to be clear about the differences between: ocean; sea & channel. In* ***Science****, it is frequently: permeable; porous; pervious & absorbant.)*

**Teaching strategies that can support learners in answering whole-class questions in lessons are:**

* Additional processing time, e.g. provide questions to learners in advance of the discussion • Visual prompts
* Co-constructing answers with peers, e.g. Think - Pair - Share
* Pre-teaching content ahead of the lesson
* Mixed-ability groupings
* Communication aids
* Sentence frames and/or sentence starters with explicit reference to language function (specific to **Scientific** skills, e.g. hypothesising, summarising, evidencing).

**Strategies to Scaffold Learning**

How to support learners who struggle to access lessons because of literacy difficulties?

* Encourage oracy; talking about writing first and unpicking tricky words results in better understanding and written fluency. Think, Pair, Share tasks are essential, and enabling learners with SEND to succeed here by seating them near a student who is more confident with speaking would be an asset.
* Provide sentence starters and key word banks, ideally as a generic ‘literacy mat’ which can be used alongside knowledge organisers to embed common styles of geographical writing.
* As evaluation is a key skill it should be built into all topics. This is often challenging for pupils, especially those with SEND. Showing learners how to evaluate using models, guided examples on a visualiser, and guided reading are very helpful. Using an evaluation prompt, such as the one below, can be very useful to enable the students to apply their own ideas to the evaluation.
* Remember that **Historical;** **Geographical** **& Scientific** literacy is often high level. Consider your own use of tier 2 and 3 language in explanations; make links to everyday language and ensure your use of tier 2 and 3 language is accessible. Regularly check understanding of learners with SEND through questioning.
* Provide visual aids to enable learners to identify, for e.g. in **Art & Design:** artists and their work, as well as to identify equipment and media**; Design & Technology –** the tools and techniques they will be expected to use / perform**; Geography –** rivers around the world; different building styles and materials / rural and urban environments; **History –** images of where in the world specific events took place and of the people involved**.**
* Use frequent modelling to show learners how to structure sentences but keep it achievable; it is better to model an imperfect answer and ask the learner to suggest improvements than to model an unachievably high-quality response. This is especially important when preparing for assessments and giving feedback, so learners clearly understand how they can achieve an excellent answer and improve their own.
* Using extended guided reading in lessons is an essential way of enabling all learners, and especially those with SEND, to access the content effectively. Articles should be adapted where necessary, and often it is more effective to write pieces bespoke for the topic you are doing. The process of delivering these in class is also important to get right, and there is an example of a Highly Intentional Process below, Figure 1, page 4. (Figure 2 on page 5 is a task for the subject leader to complete)

**Figure 1: Highly Intentional Process - Guided reading in Geography Lessons**

|  |  |  |  |
| --- | --- | --- | --- |
| **HIP stage** | **Activity** | **Rationale/ notes** | **Sample Language** |
| 0: Homework to learn vocabulary (1 week before the reading) | In the week before the reading is used, set a homework assignment where the vulnerable students (or all of the students) are given a copy of the key vocabulary to learn. This should also be shared with the EAL/SEN/Literacy coordinators and TAs where relevant | This reduces the cognitive load for the students when the reading happens in class, and enables them to have a deeper understanding of the text as it is read | This homework is important so that we can make the most of the reading time next week. It will also enable you to tackle the task we do following the reading and succeed with this. |
| 1: Pre-teach vocabulary (1-3 mins max - be careful not to spend too long) | Using the glossary, which is found at the start of the article, Select up to 5 pieces of tier 2 or 3 vocabulary from the article. Teach it directly, giving a simple definition and one or two sentences using the word. Ensure that you make the pronunciation of the word clear. Some teachers may want the class to repeat the words back to them - this will depend on your class dynamic. | Teach briskly - limit the number of questions. Word choice and definitions must be preprepared - it is very difficult to make up on the spot and retain clarity. | This word is …. Say it back to me (my turn your turn) It means ……… It might be used like this (example 1) Or like this (example 2) |
| 2: Preview the article (1-3 mins max - be careful not to spend too long) | Explain to the students what the article will be about, and what content it will cover. Teachers should also explain WHY the article is being read - this is important metacognitively - and could be related to why the knowledge is important, but also what they will be using the knowledge for afterwards (eg extended writing/ comprehension questions) | Helps students feel secure before reading, and be more likely to understand Head off any likely misconceptions re particularly difficult words, ideas or concepts | We are going to learn from an article about…. Some of the things it will help us to understand are… Look out for the section about…. Basically, this means that ….. |
| 3: Teacher reads (approx 15 mins but will vary) | Teacher reads from the article with enthusiasm and clarity. Teacher uses this stage to inspire the class: invite questions, explain things, check understanding. As you read each paragraph, scroll through the visual prompts on the board. Do explain these but not for more than 15 seconds to try not to break the flow of the reading too much. Depending on the class, their confidence and your feeling, you may also want to try ‘jump in’ reading. This is when the teacher pauses on a word of note (often those in the glossary) and the whole class repeats it out loud. If going on to do extended writing, the students should highlight sections which are relevant to the question they will be answering. If doing comprehension questions, this is not needed as questions will be numbered to match paragraphs and students should have to look and re-read sections to find answer. | Allows teachers to teach and inspire Provides another opportunity to check and address misconceptions The jump in reading can aid in concentration and tracking, and also enhance the ability of students in their pronunciation of the more challenging and relevant key terms | Now’s your chance to check that you understand, and ask any questions you may have. |

**Figure 2: Highly Intentional Process - Guided reading in xxxxxx Lessons**

**(This is a task for you to complete)**

|  |  |  |  |
| --- | --- | --- | --- |
| **HIP stage** | **Activity** | **Rationale/ notes** | **Sample Language** |
| 0: Homework to learn vocabulary (1 week before the reading) | In the week before the reading is used, set a homework assignment where the vulnerable students (or all of the students) are given a copy of the key vocabulary to learn. This should also be shared with the EAL/SEN/Literacy coordinators and TAs where relevant | This reduces the cognitive load for the students when the reading happens in class, and enables them to have a deeper understanding of the text as it is read | This homework is important so that we can make the most of the reading time next week. It will also enable you to tackle the task we do following the reading and succeed with this. |
| 1: Pre-teach vocabulary (1-3 mins max - be careful not to spend too long) |  |  |  |
| 2: Preview the article (1-3 mins max - be careful not to spend too long) |  |  |  |
| 3: Teacher reads (approx 15 mins but will vary) |  |  |  |

**How can I support learners who struggle to retain vocabulary?**

* Print knowledge organisers including word banks and visual supports for learners with SEND who need them as a reference in every lesson.
* Use retrieval practice at the start of lessons to revisit key words, identify and repeatedly focus on the most important tier 3 vocabulary. Use oracy strategies; learners are more likely to retain words between lessons if they are able use them verbally in sentences. This will include questioning to probe learners to retrieve the correct word.
* Ask learners to highlight where they have used key vocabulary in their sentences in order to recognise and reinforce this skill.

**Task:**

* Have you identified key vocabulary / terms for each topic and do all pupils have access to these before and during lessons?

**How can I support learners who struggle to access lessons because of numeracy difficulties?**

* Work with colleagues to embed geographical numeracy in the curriculum, so that learners come to expect it as part of geography lessons, e.g. mean, median, mode, range and interquartile range
* Work with colleagues in the maths department to ascertain how and when mathematical skills and concepts are taught. If there are resources learners use to scaffold their learning in maths, ensure they have access to them in geography as well.
* Allow the use of calculators. As they are always permitted in geography exams, they should also be available in lessons.

**Task:**

* Have you worked alongside the subject leader for Mathematics to identify where learning in the subject you lead can support pupils numeracy?

**How can I support learners who need additional time to develop conceptual understanding?**

* What will hold learners back if they don’t understand it? Identify what the ‘threshold concepts’ in each topic are, e.g. democracy; evaluation; analysis & composition and refer to these concepts in some way during every lesson.
* Give examples of the same concept in different contexts. Try to personalise this or use examples from the news/ media/local area, at least something that is ‘relevant’ to the pupils. This is a vital part of effective teaching, with teachers regularly referring to recent events to engage the learners, and encourage them to go and seek out information themselves independently.
* Plan specific hinge questions you will ask learners, to ensure you can evaluate the extent to which each learner is understanding. Probe learners to go beyond three-word responses to questions.
* Anticipate misconceptions and when they arise in lessons, challenge them quickly; include them in your explanations.
* Ensure that all resources are uploaded for all lessons and homework and revision onto a suitable electronic platform, e.g. Google Classroom, and clearly labelled so that learners, support staff and families can access these remotely and at any time. This will enable learners to recap work and concepts where they need to and want to.

**Task:**

* Have you identified in advance of a topic the key questions which you will want to ask of pupils – questions that address not only: who; what; where; when; why and how as well as: similarities / differences; cause & effect; rank in order of importance; synthesise your responses, etc

**How can I support learners who struggle with attention?**

* Plan seating arrangements carefully. Consider the use of proximity for learners who need prompting. Also, ensure learners are sat away from distractions - these could be environmental, e.g. windows next to a playground, or relational, e.g. peers.
* Share the big picture of the lesson but also show examples of the outcome so that learners can visualise what the overall aim is.
* Chunk lessons into distinct episodes of explanation, modelling, practice, feedback, etc. so that learners have a structure to expect. Represent these parts of the lesson on a visual timetable, which you refer to throughout the lesson.
* Plan in active breaks and opportunities for learners to move during lessons.
* Use behaviour-specific praise to reinforce effort and focus.

**Task:**

* Re: a visual of the outcome expected of pupils – do you have / are you starting to build up examples from ‘past’ pupils as to what a ‘good’ example would be to share with pupils?

**How can I support learners who struggle with change and transition?**

* Predictable classroom routines are vital, with well-planned and structured lessons with clear expectations.
* Build trust through positive interactions and praise.

**How can I support learners who struggle with fine motor skills?**

* Consider using frames or adhesives (**e.g. in Art & Design and Design & Technology),** masking tape) that hold down learners’ work to surfaces in cases where learners may struggle to hold a resource in place. Provide learners with larger scale materials to work on and gradually decrease the scale as they acquire greater control.
* Encourage learners to experiment with different media, for e.g. in **Art & Design** - when drawing offer chunkier graphite sticks as well as soft ‘B’ range pencils. Similarly, offer a range of painting application media – some learners may prefer a sponge to a brush or may even use their fingers at times.
* Plan each lesson well in advance, to consider points where learners may struggle and allow for adult guidance accordingly. Use of scissors can be a source of frustration for some learners and wider-handled or easy grip scissors can be a useful aid.
* Engaging in art and design activity is great for helping build fine motor skills for all children. Learners will enjoy and benefit from using malleable media such as clay or air dough.

**How can I support learners who need additional time to develop conceptual understanding?**

* Provide opportunities for small group learning either before (pre-teach) or during the lesson. This will support learners and allow time to ask questions or explore resources alongside adult intervention. These opportunities are part of the repetition process needed to maximise capacity to build up conceptual understanding.
* Take time to model and demonstrate each element of a process, allowing learners to develop their understanding through a step by-step approach. This will benefit all learners as it allows for an active participatory approach.
* Showing outcomes from the previous lesson’s work can be a useful memory aid.
* Have visual aids in the form of worked examples that the learners can have to hand when completing independent tasks.

**Task:**

* Do you have / are you building up a bank of examples of ‘finished’ work to share with pupils, so that they can visualise the learning process / journey?

**How can I support learners who struggle with attention?**

* Starting off each lesson with a ‘hook’ - a question or image which inspires curiosity - can help engage learners. This is most effective when two to three questions are displayed, at varying levels of complexity, with learners invited to choose and engage with one of the questions. It could be helpful if the hook has a link to their own context so that learners have a concrete reference point.
* A ‘chunked’ approach alongside cognitive shifts can aid attention and focus. For example, after having read independently for a set amount of time, learners can then discuss in small groups before writing an answer to a set question in their books. Having a dual-coded lesson plan with known images for the different parts of the lesson and time allocated can support learners in engaging in each component of the lesson.
* Develop tasks that keep pupils engaged in their learning, e.g. if showing a video clip, provide learners with phrases to listen for or key questions to answer.

**Task:**

Do pupils have access to a resource (e.g. pen / pencil / paper) when observing a video / images which has key words / questions (e.g. who: what; where; when; why and how) to focus their notes?