**Scheme of Work**

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| **Teacher name:**  |  | **Subject:**  |  |
| **Course title:** | **GCSE Maths** |
| **Course level:** | Pre Entry  | Entry 1  | Entry 2  | Entry 3  | Level 1  | Level 2  | Level 3  | Level 4  | Level 5  |
| **Venue:** |  | **Days and times:** |  |
| **Mode of delivery** |  | **Start Date:** |  | **End Date:**  |  |

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| **Course Intent** |
| **What is the purpose of this course? What does this course prepare learners to do next?**  |
| * Improve maths and problem-solving skills in real- life familiar and unfamiliar contexts
* Develop learners’ ability to understand and use maths effectively in everyday life and work
* Gain a GCSE Maths qualification
* Progress to an apprenticeship, work placement, further or higher educationcourse
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| **What skills, knowledge and understanding will learners have developed by the end of this course and how will they be able to apply them?**  |
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| **In what order are the main topics taught and what is the rationale for this?** |
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| **Which wider skills and behaviours will learners have developed by the end of this course in order to prepare them for what they will do next?** |
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| **Teaching and learning approaches:** * **Retrieval Practice/Interleaving:** previously taught topics are revisited regularly, i.e. 5-a-day activities.
* **Spacing:**revision activities are spaced out at the optimal intervals for retention.
* **Contextualising:**A context is given at the beginning and referred to the same content later in the session, but also change of context is provided to help improve problem-solving skills.
* **Flipped Learning**: Learners are introduced to this from Session 1, and it is expected that they study new topics before coming to class through independent study using Learner Moodle.
* **Development of soft skills/Project-based learning:**Learners can practise their skills through tasks set in real-life context.
* **Digital tools to promote independent learning**: Learning via various electronic platforms such as Moodle, MyMaths, MathsWatch, Kahoot, MathBase or Padlet
* **Mathematical Mastery/Greater Depth:** Use of manipulatives, Bar Modelling and Dual Coding, as well as greater depth within the same topic, rather than ‘moving on’ to the next level.
* **Mathematical Resilience:**A range of activities are planned to tackle this, but it is interwoven into the practice/lessons.
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| **Week beginning and week no** | **Session topic****(include assessments and tutorials) and main learning outcomes** | **Suggested resources for main activities and extensions** | **Development of wider skills and behaviours relevant to course intent** | **Key events/content***Please consider these topics when planning your sessions in order to broaden learners’ understanding of E&D, British Values, health and wellbeing, sustainability etc.* |
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| 09/09/19 | Induction to the centreIntro to the courseGrowth Mindset - Mathematical Resilience- Order positive and negative integers- Use the symbols =, <, >, etc.- Apply the four operationLearning how to learn + commitmentMore detailed learning objectives can be found [here](https://baesacuk.sharepoint.com/%3Af%3A/s/teams/maths/Ej_Osa7o3BdPqUMTkCWm_sAB64lGLonrplcqtghLjUwqjg?e=w55v8O) | Health and safety – fire exit route, assistance with leaving the building, toilets, ect.[Learner induction video](http://www.learnbaes.ac.uk/about-us/learner-induction-video) and animated video on main concepts and their applicabilityClass rules/course requirementsA letter to maths - Ask learners to write a short letter to maths describing their feelings towards maths – the idea is to talk about maths anxiety and come back to complete these letters at the end of the course – see how feelings towards maths have changed.Share motivational [video by Jo Boaler](https://www.youtube.com/watch?v=3ZyVBwnScJw). Ask learners to note the main messages given by Jo and the learners in the video. [Fluency resources/cards and dominoes](https://baesacuk.sharepoint.com/%3Af%3A/s/teams/maths/Ev8BWY-OMOpCsIqH3v08vrkBRy1OS7qmV0mNq1Wn9vehnQ?e=spR3Hm) on positive and negative numbers, the four operations and the use of symbols. [Reasoning and problem-solving resources](https://baesacuk.sharepoint.com/%3Af%3A/s/teams/maths/EgSsTqy3bglEivXLMA4o50wBA_Ve4JFxv38Aq48eCtF5LQ?e=kZiYxf) on the same topics. Learners work in pairs to work out the answer to a couple of problem reasoning/solving questions.[Misconceptions:](https://baesacuk.sharepoint.com/%3Af%3A/s/teams/maths/ErVJPE9GTNRCnma3t6jqV9YBqOFW7XFqVBnbxfUlyUvUPw?e=EfB02c) Learner try to find the answer to a misconception question individually. Timed activity. Some can try and find what the other potential mistakes can be made and explain their reasoning. Compare in pairs. Whole class discussion. Retrieval facts – [the forgetting curve](https://elearningindustry.com/forgetting-curve-combat)/ visual learning – mind maps/ flipped learning- Moodle Discuss with learners the importance of revisiting notes and doing home-work within the first 24 hours, in day 10, 30 and 60 to help retain information. Give instructions on using Moodle and Flipped Learning.Give the [Destinations Catalogue](https://baesacuk.sharepoint.com/%3Af%3A/s/teams/maths/EsYvJMWGiEBGtpucA9fIYVUBpkTG0Ad3uiL5SwBxsXzjdQ?e=zWCJ4e) to prepare for the next session. | Growth mindsetKey words: integers ……… | International Day of Democracy15th  |
| 16/09/19 | **Number Properties**Apply the four operations, including formal written methods, to negative numbersRecognise and use prime numbers, factors, multiples, common factors, common multiples, HCF and LCMApply the Unique Factorisation TheoremDetailed learning objectives can be found [here](https://baesacuk.sharepoint.com/%3Af%3A/s/teams/maths/EsYvJMWGiEBGtpucA9fIYVUBpkTG0Ad3uiL5SwBxsXzjdQ?e=zWCJ4e). | Pre-starter: [5-a-day](https://mathsbot.com/questionsIWB) . Pick a topic from drop-down menu or random topics   [Starter](https://baesacuk.sharepoint.com/%3Af%3A/s/teams/maths/EqJyAHkzESZEv__kzZHlcKwBTNifvifF6K-8xlixiBBEVg?e=LgaYyf): Pick one or two or have your ownLearners are asked to self-assess their answers to the [Destinations Catalogue](https://baesacuk.sharepoint.com/%3Af%3A/s/teams/maths/EsYvJMWGiEBGtpucA9fIYVUBpkTG0Ad3uiL5SwBxsXzjdQ?e=zWCJ4e) against the answer scheme.  Intro to the topic; elicit uses of number properties in everyday life; think-pair-share what could go wrong if not knowing how to work with number properties. Share the [learning objectives document](https://baesacuk-my.sharepoint.com/%3Aw%3A/g/personal/horeshkam_baes_ac_uk/EVg4Q1UfkmdMtmX3UEwFkWABoA3bEHvO-ePvkkLTye2aJg?e=lJ7sG5) with learners and ask. Each learner picks the learning objective they need to focus on and rag rate their confidence.  Learners use books, computers/tablets/phone, help from each other to answer all the questions in the Destinations Catalogue.  [Fluency resources](https://baesacuk.sharepoint.com/%3Af%3A/s/teams/maths/EpbdITTKI5BKm5lzEorOfSwBSRM_HKhtTDE0n6U-O-r3xA?e=qvJXBl) can be used to work one-to-one and small groups - help where needed. Extra quizzes on MathsWatch/KESH/M4THS websites.  Reflect on learning objectives met. Evidence by giving an example or answering questions in the Destinations Catalogue/MathsWatch.  [Application](https://baesacuk-my.sharepoint.com/%3Ax%3A/g/personal/horeshkam_baes_ac_uk/EWaY-GKOUbVAjAEp2c0cAlYBB4sJAmTyN-EnW4R_1le7tg?e=i8Iwwf): Banks balance; money going and out for a week, being overdraft, credit/debit. Adding and subtracting negative numbers. Multiples of overdraft amounts.- They work out missing values in a balance sheet.   -Work out missing values with space to add some items  -Create own question/spreadsheet based on the examples given.  Whole class feedback. LCM/HCF extension – Beth can only pay with £50 pound notes while Dipesh can only pay with £20. How many items would they have bought to reach a common spending amount. The reverse: £300 is the amount, what nots must they have used? Reasoning and problem solving: Learners work in pairs to work out the answer to problem reasoning/solving questions. One works on [A02](https://baesacuk.sharepoint.com/%3Aw%3A/s/teams/maths/ES2WMnhVomROiIEOtAQnowoB4N2QsLDgNSpNT1pSzx8jHg?e=WdrHml) and the other on [A03](https://baesacuk.sharepoint.com/%3Aw%3A/s/teams/maths/EUMN_hunOERBqqLsd3ctkHYByJbs4s9B4Tx19jZtqfbI_g?e=b58nvs). Then learners swap papers and mark each others’ work/explain to each other how they worked out the answer. Stop only if need be for whole class feedback   [Misconceptions:](https://baesacuk.sharepoint.com/%3Af%3A/s/teams/maths/ElSpqbU8INtDrcSZ5FghkesBPI42KxbVtHs48-brmvtdjw?e=quNkLZ) Learner try to find the answer to a misconception question individually. Timed activity. Some can try and find what the other potential mistakes can be made and explain their reasoning. Compare in pairs. Whole class discussion.  Revisit learning objectives and reflect.  Homework |  |  |
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