**ANNEXURE A**

**LANGUAGE AND MATHEMATICS ANA FRAMEWORK FOR GRADES 3, 6 AND 9**

**1. INTRODUCTION**

The qualitative analysis or diagnostic analysis, as it is commonly known, is credited for its efficacy to improve classroom practice. It was conducted by analysing the actual learner responses from a sample of scripts. The sample of scripts for analysis was drawn from all 23 districts and covered the different levels of performance (low, medium, high). In Grades 3 the scripts that were sampled were representative of the 4 Home Languages, English, Afrikaans, Isi Xhosa, Sesotho and for Grades 6 and 9 , English First Additional Language was sampled. The information gleaned from the diagnostic analysis was primarily informed by two factors: the wrong answers that learners presented and the processes of arriving at the correct answers.

**2. RATIONALE**

An emphasis on Grades 3, 6 and 9 should not create an impression that other grades are less important. The ANA diagnostic analysis was aimed at identifying learners’ weaknesses in Languages and Mathematics and addressing them with appropriate interventions from the DBE to school level.

**3. PACKAGING OF THE FRAMEWORK**

The Framework covers three main areas:

* firstly, the identified weaknesses that emerged from the diagnostic analysis – these are characterized by the common errors or misconceptions that were revealed when the actual learner responses were examined
* secondly, remedial measures to improve classroom practice – these remedial measures are intended to provide suggestions on how best the identified weaknesses can be addressed
* thirdly responsibilities to be carried out by the ECDOE, Districts and schools

**4. HOW TO USE THE 2015 ANA FRAMEWORK FOR IMPROVEMENT**

The 2015 ANA Framework for Improvement is the outcome of the diagnostic analysis and it is therefore strongly recommended that it should be read in conjunction with the ANA 2014 Diagnostic Report.

The ECDOE, Districts and Schools may use the core weaknesses presented in the Framework to develop interventions or remedial measures that are contextualised for their learners.

The effective implementation of this Framework hinges on intensive monitoring, evaluation and support.

Even at school level, School Management Teams (SMTs), particularly Heads of Department (HODs) responsible for Languages and Mathematics, should strengthen monitoring and support for teachers in a constructive and developmental manner. The fundamental goal is to ensure that the areas of weakness that learners have revealed are corrected through effective teaching and assessment practices.

**5. LANGUAGES FRAMEWORK FOR IMPROVEMENT**

**5.1 GRADE 3 HOME LANGUAGE**

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| **Identified**  **weaknesses:** | **Remedial measures to improve classroom practice** | **RESPONSIBILITIES** | | |
| **PROVINCIAL SUPPORT PLAN** | **DISTRICT SUPPORT PLAN** | **SCHOOL SUPPORT PLAN** |
| **QUESTION 8.3**  **Skill:** Identify and use conjunctions (and, but) correctly. | * Teach language structure in context e.g. when reading a story or any reading text, the joining words should be identified in sentences. * Learners need to practice to join sentences using the joining words such as ‘and’, ‘but’, ‘so’, etc. both orally and in written work. * A variety of these activities should be practiced in class using DBE workbooks, ANA previous question papers and ANA exemplars.   ***Reference***: Home Language CAPS policy document, Term 3. | * Monitor Professional Gatherings to share best practices e.g. “**How I teach”** (language structure) sessions. * Monitor and Support the moderation of formal tasks and the use of DBE workbooks. | * Provide opportunities for professional gatherings to share best practices e.g. * “**How I teach”** (language structure) sessions. * Facilitate the moderation of formal tasks and monitor the use of DBE workbooks. | * Support and Provide opportunities for professional gatherings to share best practices e.g. “**How I teach”** (language structure) sessions at school level * Monitor and Support the moderation of formal tasks and the use of DBE workbooks. |
| **Question 9.1, 9.2 and 9.3**  **Skill:** Usepresent, past and future tenses correctly. | * Teach language structure (tenses) in context by exposing learners to a variety of texts e.g. stories or any other texts focusing on tenses. * Tenses can be introduced orally and learners must be given multiple opportunities to change verbs into different tenses as per instructions. Learners must be encouraged to use correct tense when responding to questions in class or doing oral presentations. * Teach focussed lessons and give more practice on rewriting sentences from one tense to another. * Consolidate teaching of tenses using DBE workbooks, ANA previous question papers and ANA exemplars. * Teaching of tenses starts from grade 1 Term 3, progression of correct use of tenses from grade 1 to grade 3 must therefore be monitored. Learners must be exposed to a variety of activities and tenses should be revised continuously.   ***Reference:*** Home Language CAPS policy document. | * Monitor the use of CAPS documents, DBE workbooks and text books as well on teaching of tenses * Encourage the use of Big Books for Shared Reading and graded readers on different tenses during Drop All and Read and some writing activities | * Monitor quality of formal assessment tasks and content coverage through SBA sessions and on-site school visits. * Monitor utilization of DBE workbooks | * Support the utilisation of CAPS documents and DBE workbooks on present and past tenses * Monitor the development of own word bank and personal dictionary in the classroom * Provide graded readers on different tenses during Drop All and Read. * Support the teaching of language structure (tenses) in context e.g. when teaching reading. * Monitor integration of tenses with other subjects e.g. **Mathematics:** **word sums.**   **NB Teaching of tenses starts from Grade 1 Term 3 CAPS document page 72, Grade 2 Term 2 page 90 and Grade 3 Term 1: pg 109 Term 2 -page 116. (Teach tenses and revise continuously)** |
| **Question 10.1, 10.2 and 10.3**  **Skill:** Use phonic knowledge and spelling rules to write unfamiliar words ( sh, ch, th). | * Revision of phonics using charts, phonic cards, pictures, DBE workbooks. * Teach phonics in context e.g. in paragraph reading, story reading, etc. * Use of word wall for teaching spelling, word bank and develop their own personal dictionaries. * Learners should practice clapping of syllables. * Use of spelling games and spelling B. * Consult CAPS Document/ schools phonic programme. | * Monitor the use of CAPS documents, DBE workbooks and text books as well on teaching of phonics and spelling.   Encourage the use of word bank, personal dictionaries, the clapping of syllables and some phonic activities | * Provide opportunities for professional gatherings to share best practices e.g.   “How I teach” (language structure) sessions on teaching of phonics and spelling   * Facilitate the moderation of formal tasks and monitor the use of DBE workbooks. | * Monitor the development of own word bank and personal dictionary in the classroom * Support the teaching of phonics and spelling games in context e.g. when teaching reading. * Support the utilisation of CAPS documents and DBE workbooks on teaching phonics. |
| **Question 11.1, 11.2 and 11.3**  Skill: Write words to form a sentence using comma and question mark. | * Teachers should use reading lessons to teach punctuation. -Learners need to observe these when reading a text. * Chart with different punctuation marks, their use and examples of correctly punctuated sentences should be displayed in the classroom as a source of reference for learners. * Provide learners with multiple opportunities to re-write sentences with correct punctuation using DBE workbooks, ANA exemplars and previous question papers. * Teaching of punctuation marks starts from grade 1 Term   ***Reference:*** Home Language CAPS Policy document. | * Monitor the use of CAPS documents to teach punctuation marks eg comma and question marks * Encourage activities with punctuation marks and utilisation of DBE Workbooks | * Monitor quality of formal assessment tasks and content coverage through SBA sessions and on-site school visits. * Monitor utilization of DBE workbooks and reading resources. | * Encourage the provision of multiple opportunities to re-write sentences with correct punctuation. * Ensure that punctuation and grammar skills are taught as per CAPS requirements * Use DBE Workbooks to consolidate comprehension and language activities as well as spelling and dictation activities * The ANA analysis process will be repeated in all the Grades. * This will result in School Improvement Plan |
| **Question 13.2**  **SKILL:** Interpret information from graphical texts such as table, e.g. describe similarities and differences, and analyse, compare and contrast information. | * Learners should be exposed to informational texts e.g. reads and interprets tables such as calendar, duty list, charts etc. * Teaching of tables should be integrated with data handling in Mathematics. Use DBE workbooks, ANA previous question papers and ANA Monitor and support the utilization of exemplars. Teaching of tables and graphs start at grade 1 term 3.   ***Reference:*** Home Language CAPS Policy document. | * Monitor use of DBE workbooks and use of previous ANA exemplars and question papers. * Monitor quality of Formal Assessment Tasks (FATs) through on-site school visits and School Based Assessment (SBA). | * Monitor use of DBE workbooks and use of previous ANA exemplars and question papers. * Monitor quality of FATs through on-site school visits and SBA. | * Monitor the utilization of DBE Workbooks activities and integration of Mathematics in teaching graphical texts, * **Monitor and support SBA and analysis of assessment results quarterly** to identify performance trends and to **inform subject improvement plans.** * Monitor consolidation of teaching of tables using activities on DBE workbooks e.g. Term 1- Term 3.   **NB. Consult CAPS Document Grade 1 Term 3 pg 69; Grade 2 Term 3 pg 93; Grade 3 Term 3 pg 78** |
| **QUESTION 15**  **SKILL:** Write at least one paragraph of 8 or more sentences in total on a given topic. | * Teach handwriting skills to ensure that learners write legible and correct sentences in both print script and cursive writing. It is suggested that each learner should have a separate handwriting exercise book to practice correct letter formation in both lower and upper-case letters, writing of short words using correct spacing, transcribe words and sentences on daily basis. ***Reference: Provincial Handwriting Guidelines Grade R-3***. * Reading and writing are interrelated, use the Shared Reading lesson to create a new story in the Shared writing lesson based on the Shared Reading text and use the new text in Shared Reading lesson. * Explicit teaching of the 5 components of reading, i.e. Phonemic awareness, word recognition, comprehension, vocabulary and fluency plays a major role from Grade one as per CAPS requirements. ***Reference: Teaching Reading in the Early Grades, Home Language CAPS Policy Document.*** * Use reading texts such as Big books, poems, theme poster to generate ideas for writing activities. * Creative writing activities should be done at least once a week e.g. writing of own story, personal news and events, poems, lists, invitation cards, etc. Teachers are encouraged to use a separate creative writing book. * Use the writing process approach so that learners can plan and edit their own writing. Incorrect use of grammar, punctuation and spelling errors from learners writing must be used to inform focused language lessons. ***Reference: A guide to writing.***   Keep on encouraging and supporting the learners. Choosing a “STAR WRITER” for the day is a good motivator. Display children’s writing and story books in the classroom. “SUPER STARS” must read their story to the Principal or at assembly. ***Reference: Developing Independent writers and readers”.*** | * Developing Independent Reading and Writing documents and DBE workbooks in Home Language * Provide Guidelines for Creative Writing activities * Monitor and Support ‘How to teach’ on writing methodologies * Conduct Professional Development Writing workshops for the Languages Advisors * Support Creative Writing Festivals and encourage the displays of Learners Story Books * Monitor the implementation of Provincial Reading Strategy at district level * **Support the analysis of assessment results quarterly** to identify performance trends and to **inform Subject Improvement Plans.** * **Mediate and distribute the ANA exemplars** to districts to assist in the preparation of tasks and external assessment * Remind Languages Advisors to **consult the relevant national and provincial guidelines** on “Teaching Reading in the Early Grades”, National DVDs, National Learner Workbooks, FFL, Developing Independent Readers and Writers Guideline, etc | * Monitor use of correct Provincial handwriting guidelines to ensure correct letter formation. * Monitor the shared writing activities done at school through SBA and on-site school visit. * Conduct creative writing workshop for underperforming schools. * Conduct frequent circuit meeting gatherings for underperforming schools and encourage schools to write at least one creative writing piece that is shared in these meetings. * Monitor and evaluate writing benchmarks for grades 1 to 3. * **Implemen**t the **Provincial Reading Strategy** at school level * Conduct **on-site support** to assist with classroom organisation and methodology, especially small group work and independent work * **Analyse assessment results quarterly** to identify performance trends and to **inform subject improvement plans.** * **Study the ANA exemplars** to assist in the preparation of tasks and external assessment * Remind teachers to consult the relevant national and provincial guidelines on “Teaching Reading in the Early Grades”, National DVDs, National Learner Workbooks, FFL, Developing Independent Readers and Writers Guideline, etc | * Monitor the utilization of DBE Workbooks activities and Developing Independent Writing document * Encourage thorough participation in Creative Writing Festivals * Ensure that teachers are implementing the Provincial Reading Strategy * Support activities on Creative Writing and displays of learners story books. * Support classroom organisation and methodology, especially small group work and independent work in classroom visits * Monitor and support the analysis of assessment results quarterly to identify performance trends and to inform Subject Improvement Plans. * **Revise the ANA exemplars** to assist in the preparation of tasks and external assessment   Ensure that teachers are **consulting the relevant national and provincial guidelines** on “Teaching Reading in the Early Grades”, National DVDs, National Learner Workbooks, FFL, Developing Independent Readers and Writers Guideline, etc  **NB Creative writing activities should be done at least once a week e.g. writing of own story, writing of own news. Teachers to be encouraged to use a separate creative writing book.**  **Reference: All About Me/Konke Ngam. Independent Reading and Writing, and consult CAPS Policy Documents:**  **Grade 1 Term 1- 4 Grade 2 Term 1- 4 Grade 3 Term 1- 4.** |

**5.2 GRADE 6: 2015 FIRST ADDITIONAL LANGUAGE FRAMEWORK FOR IMPROVEMENT:**

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| **Intermediate Phase (Grade 6): First Additional Language** | | | | | | |
| **COMPREHENSION** | | | | | | |
| **Identified**  **weaknesses:** | **Remedial measures to improve classroom practice** | | **Responsibility** | | | |
| **Province** | | **District** | **School** |
| Inability to:   * comprehend the variety of texts that the ANA Paper expose the learner to: (E.g. Questions a story, poem, graph and an information text) * locate and retrieve information in a given text: (E.g. Question 11) * make inferences andinterpretations: (E.g. Questions 3,15-17) * provide reasons and explanations: (Questions 2,5 and 7) * interpret characters or events in a story, make inferences and give an opinion; (Questions 1,2,5,8 and 9)   Lack of:   * understanding of a text (e.g. main idea and details in a text, cause and effect, sequence of events, lesson of the story/text): (E.g. Question 12 | Teach comprehension skills so that learners know how to:   * comprehend texts * analyze different text types * locate and retrieve information * make inferences and interpretations * integrate ideas and information across texts * provide reasons and an opinion.   Provide more opportunities for learners to read a variety of texts.  Ensure schools with Grade 6 learners order:   * approved Core Readers and * sets of Graded Readers from the National Catalogue.   Teach reading strategies, including phonics and word attack skills in the FAL.  Include daily reading time so learners read a minimum of **one book** per week throughout the year. | | Develop, deliver and mediate to districts the ANA: 2014 Diagnostic Reports and 2015 and 2016 Frameworks for Improvement. Monitor and support mediation and implementation of ANA Diagnostic Reports and Improvement Plans in districts  Submit Quarterly ANA progress reports to DBE  Support districts and schools to plan and teach structured reading comprehension lessons as per CAPS requirements | | Customise and mediate the Provincial Improvement Plans to circuits and schools.  Monitor and support implementation of ANA Improvement Plans in schools.  Submit monthly ANA progress reports to province  Support schools to order readers, use the ANA analysis to plan and teach structured reading comprehension lessons as per CAPS and form School Literacy Teams  Monitor and report on curriculum coverage, the teaching of structured reading comprehension lessons | Customize and implement the Remedial measures to improve classroom practice as per the2015 and 2016 ANA Frameworks for Improvement.  Submit monthly ANA progress reports to districts  SMTs to ensure schools order and use core readers and graded readers to improve teaching of reading and reading comprehension  SMTs to form a School literacy team in the school |
| Lack of familiarity with different figures of speech and insufficient vocabulary to comprehend their meaning:  (E.g. Questions 11-13)  Insufficient vocabulary to understand either the question or the text: (E.g. Question 4, 5,10 and 28 )    Inability to write a summary: (E.g. Question 36) | Expose learners to more vocabulary e.g. When introducing a new text,   * build the vocabulary first as part of the pre-reading activity, * teach strategies to decode unknown words, * teach 3-5 new words daily and   provide opportunities for learners to use this new vocabulary orally and in their writing. | | | Monitor and report on curriculum coverage, procurement of readers and the teaching of structured reading comprehension lessons | Workshop teachers on teaching reading comprehension using different text types | Teachers to use the ANA analysis to plan and teach structured reading comprehension lessons, i.e. to:   * to analyze a range of different text types * sequence events in a story * extract specific details from a text * make inferences and interpretations * give a reasoned opinion and provide practice using different figures of speech |
| **LANGUAGE** | | | | | | |
| Inability to:   * punctuate a sentence or paragraph and add capitalization * rewrite sentences in a different tense   Poor knowledge of spelling rules  Poor understanding and use of different parts of speech  Inadequacy in writing meaningful correctly punctuated sentences  Lack of understanding of meta-language such as punctuation, different parts of speech, synonyms and antonyms, tenses, plurals, prefix, suffix and root or base word, direct and reported speech, past perfect progressive tense, adjectives as a part of speech | Teach focused lessons and give more practice in:   * using different parts of speech e.g. joining sentences using the correct connecting word to show addition (e.g. and), sequence (e.g. then, next), contrast (e.g. but) and reason (e.g. because) * rewriting sentences from one tense to another * rewriting sentences and paragraphs using correct punctuation * using the correct subject verb concord   Ensure learners are familiar with meta-language such as punctuation, different parts of speech, synonyms and antonyms, tenses, plurals, prefix, suffix and root or base word, direct and reported speech, past perfect progressive tense, adjectives as a part of speech. | | | Develop, deliver and mediate to districts the ANA: 2014 Diagnostic Reports and 2015 and 2016 Frameworks for Improvement.  Monitor and support mediation and implementation of ANA Diagnostic Reports and Improvement Plans in districts  Submit Quarterly ANA progress reports to DBE  Support districts and schools to plan and teach structured language lessons as per CAPS | Customize and mediate to circuits and schools the ANA: 2015 and 2016 Frameworks for Improvement.  Monitor and support implementation of ANA Improvement Plans in schools.  Submit monthly ANA progress reports to province    Support schools to orders readers, use the ANA analysis to plan and teach structured Language lessons as per CAPS and form School Literacy Teams | Customize and implement the Remedial measures to improve classroom practice as per the2015 and 2016 ANA Frameworks for Improvement.  Submit monthly ANA progress reports to districts  SMTs to form a School literacy team in the school    Teachers to use the ANA analysis to plan and teach structured language lessons on tenses, subject verb concord, different parts of speech, use of correct punctuation and spelling |
| Lack of vocabulary means that learnersdo not know the meaning of words  Inability to summarise a story as a result of an inability to differentiate main points from supporting detail | | Increase the number of grammar and vocabulary exercises.  Organize spelling competitions.  Use the grammar, punctuation and spelling errors from learners’ writing to inform focused Language lessons | | Monitor and report on curriculum coverage and the teaching of structured language  lessons  Ensure learners write different text types on a weekly basis using writing frameworks and the process approach | Monitor and report on curriculum coverage, the teaching of structured language lessons  Workshop teachers on teaching language and using process writing to produce different text types using writing frameworks  Organize spelling competitions | Teachers to provide learners with opportunities to write different text types on a weekly basis using  writing frameworks so they are familiar with different formats and requirements as per CAPS    Teachers to use the process approach to writing so that learners plan and edit their writing |
| **WRITING** | | | | | | |
| Weak letter writing: (E.g. Question 37)  Poor grammar, language use, spelling and punctuation | | Ensure learners write different text types on a weekly basis so they are familiar with different formats and requirements as per CAPS. e.g.:   * a story * descriptive paragraph * a letter. | | Develop, deliver and mediate to districts the ANA: 2014 Diagnostic Reports and 2015 and 2016 Frameworks for Improvement. | Mediate to circuits and schools the ANA: 2014 Diagnostic Reports and 2015 and 2016 Frameworks for Improvement. Monitor and support implementation of ANA Improvement Plans in schools. | Implement the Remedial measures to improve classroom practice as per the2015 and 2016 ANA Frameworks for Improvement.  Submit monthly ANA progress reports to districts |
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| Inability to construct meaningful sentences to form a logical paragraph on the given topic  Failure to write on the given topic  Failure to write in a logical and sequential way  Failure to understand how to use a letter format  Inability of learners in writing different texts  Limited vocabulary | | Use the grammar, punctuation and spelling errors from learners’ writing to inform focused language lessons.  Ensure that correct punctuation is used when learners write their own stories.  Use the grammar, punctuation and spelling errors from learners’ writing to inform focused Language lessons.  Use the process approach to writing and support learners by providing writing frameworks | | Monitor and support mediation and implementation of ANA Diagnostic Reports and Improvement Plans in districts  Support districts and schools to plan and teach structured writing lessons as per CAPS  Monitor and report on curriculum coverage, the teaching of structured writing lessons  Ensure learners write different text types on a weekly basis using writing frameworks and the process approach | Submit monthly ANA progress reports to province  Support schools to plan and teach structured writing lessons as per CAPS and form School Literacy Teams  Monitor and report on curriculum coverage, the teaching of structured writing lessons  Workshop teachers on using process writing to produce different text types using writing frameworks  Organize spelling competitions | SMTs to form a School literacy team in the school  Teachers to provide learners with opportunities to write different text types on a weekly basis using writing frameworks so they are  familiar with different formats and requirements as per CAPS    Teachers to use the process approach to writing so that learners plan and edit their writing  Teachers to support learners by providing writing frameworks |

**5.3 GRADE 9: 2015 FIRST ADDITIONAL LANGUAGE FRAMEWORK FOR IMPROVEMENT:**

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| **Senior Phase (Grade 9 ): First Additional Language** | | | | |
| **COMPREHENSION** | | | | |
| **Identified**  **weaknesses:** | **Remedial measures to improve classroom practice** | **Responsibility** | | |
| **Province** | **District** | **School** |
| Lack of understanding of the difference between a fact and an opinion: (E.g. Question 2.1)  Inability to extract (quote) the correct sentence from a paragraph: (E.g. Question 2.2.)  Inability to provide reasons when required to do so: (E.g. Question 7.1; 7.2 etc.)  Inability to differentiate between a Topic sentence and supporting sentences: (E.g. Question | Ensure schools with Grade 9 learners order approved Core Readers and novels from the National Catalogue.  Expose learners to a variety of reading resources (fiction and non-fiction) that cater for various reading levels (emergent, fluent, independent) and interests in the classroom.  Provide more opportunities for learners to read a variety of texts on a frequent basis and analyze a wide range of texts and genres of increasing complexity.  Teach and practise the use of a range of reading strategies, e.g. skimming, scanning, prediction, comparing, contrasting, inferring and summarizing.  Teach comprehension skills so learners know how to:   * comprehend texts, * analyze a wide range of different text types, * locate and retrieve information, * extract specific details from a text, * make inferences and interpretations and * give a reasoned opinion. | Develop, deliver and mediate to districts the ANA: 2014 Diagnostic Reports and 2015 and 2016 Frameworks for Improvement.  Monitor and support mediation and implementation of ANA Diagnostic Reports and Improvement Plans in districts  Submit Quarterly ANA progress reports to DBE  Support districts and schools to plan and teach structured reading comprehension lessons as per CAPS requirements | Mediate to circuits and schools the ANA: 2014 Diagnostic Reports and 2015 and 2016 Frameworks for Improvement.  Monitor and support implementation of ANA Improvement Plans in schools.  Submit monthly ANA progress reports to province  Support schools to order core readers and novels, use the ANA analysis to plan and teach structured reading comprehension lessons as per CAPS and form School Literacy Teams | Implement the Remedial measures to improve classroom practice as per the 2015 and 2016 Frameworks for Improvement.  Submit monthly ANA progress reports to district  SMTs to ensure schools order and use core readers and novels to improve teaching of reading and reading comprehension  SMTs to form a School literacy team in the school |
| Inability to differentiate main points from supporting detail: (E.g. Question 6)  Inability to write a summary: E.g. Question 6)  Insufficient vocabulary means that learners do not know the meaning of words:  E.g. (Question 7.1)    Inability to locate, retrieve and comprehend the information: (E.g. Questions 2.2, 5, 8, 22.1, 22.4 and 23.4) | Expose learners to more vocabulary e.g. When introducing a new text:   * build the vocabulary first as part of the pre-reading activity * teach strategies to decode unknown words * teach 3-5 new words daily and * provide opportunities for learners to use this new vocabulary orally and in their writing.   Expose learners to various types of questions.  Give learners practice in answering questions that address different cognitive levels, (literal, reorganisation, inference, evaluation and  appreciation) | Monitor and report on curriculum coverage, procurement of readers and the teaching of structured reading comprehension lessons  from the variety of texts that the ANA Paper expose the learner to: (E.g. an article (Questions 1-8), an information text (Question9), a dictionary entry (Questions 21.1-21.4), an advertisement (Questions 22.1-22.5), a cartoon (Questions 23.1-23.5), and a poem (Questions 24.1-24.6)  Inability to explain concepts in an information text:  (E.g. Question 21.2)    Inability to make inferences and interpretations: (E.g. in 22.3)  Inability to interpret a text , make inferences and give a reasoned opinion or explanation:(E.g. Question 4 and 23.1) | Monitor and report on curriculum coverage, the teaching of structured reading comprehension lessons  Workshop teachers on teaching reading comprehension using a range of different text types | Teachers to use the ANA analysis to plan and teach structured reading comprehension lessons:  to analyze a wide range of different text types, extract specific details from a text, make inferences and interpretations, give a reasoned opinion and provide practice using different figures of speech  Teachers to teach 3-5 words daily and give learners to use the vocabulary orally and in writing |
| **LANGUAGE** | | | | |
| Lack of editing skills. I.e. an inability to correct the spelling and grammar in a text:  (E.g. In Question 9)  Inability to rewrite sentences in a different tense: (E.g.Question11.1 and 11.2)  Poor understanding and use of different parts of speech: (E.g. Questions 12,13,14,16,17,18 and 21.1)  Inability to differentiate between a Topic sentence and supporting sentences: (E.g. Question 20)  Inability to use different forms of a word: (E.g. Question 21.3)  Inability to “Read and Respond” to a visual text: (E.g. Question 23)  A lack of understanding of different figures of speech: (E.g. Question 10) | Teach focused lessons and give more practice in:   * identifying and using different parts of speech * rewriting sentences from one tense to another using different tenses and verb forms e.g. modals * editing and rewriting sentences and paragraphs using correct spelling, grammar and punctuation.   Teach Language structures in context and learners must be given opportunities to practise these different skills.  Ensure learners are familiar with meta-language such as:  Punctuation, different parts of speech,  synonyms and antonyms, tenses, plurals, prefix and suffix, root or base word, direct and reported speech,  past perfect progressive tense,  adjectives as a part of speech. | Develop, deliver and mediate to districts the ANA: 2014 Diagnostic Reports and 2015 and 2016 Frameworks for Improvement.  Monitor and support mediation and implementation of ANA Diagnostic Reports and Improvement Plans in districts  Submit Quarterly ANA progress reports to DBE  Support districts and schools to plan and teach structured language lessons as per CAPS | Mediate to circuits and schools the ANA: 2014 Diagnostic Reports and 2015 and 2016 Frameworks for Improvement.  Monitor and support implementation of ANA Improvement Plans in schools.  Submit monthly ANA progress reports to province  Support schools to order Language Text Books, use the ANA analysis to plan and teach structured Language lessons as per CAPS and form School Literacy Teams | Implement the Remedial measures to improve classroom practice as per the 2015 and 2016 Frameworks for Improvement.  Submit monthly ANA progress reports to district  SMTs to form a School literacy team in the school  Teachers to use the ANA analysis to plan and teach structured language lessons on passive/active voice, tenses, direct/reported speech, different parts of speech, modals, use of correct punctuation and spelling |
| A lack of understanding of meta-language: such as punctuation, different parts of speech, synonyms and antonyms, tenses, plurals, prefix, suffix and root or base word, direct and reported speech, past perfect progressive tense, adjectives as a part of speech  Inability to convert a sentence in the active voice into the passive voice or direct speech into reported speech and vice versa (E.g. Question 10 and 15) | Increase the number of grammar and vocabulary exercises. | Monitor and report on curriculum coverage, the teaching of structured language lessons | Monitor and report on curriculum coverage, the teaching of structured language lessons  Workshop teachers on teaching Language structures in context and learners must be given opportunities to practise these different skills. | Teach Language structures in context and learners must be given opportunities to practise these different skills. |
| **WRITING** | | | | |
| Weak letter writing: (E.g. Question 25)  Failure to plan the writing process  Lack of a rich and variedvocabulary  Weak language use, spelling and punctuation  Inability to construct meaningful sentences to form a logical paragraph on the given topic  Failure to write on the given topic  Failure to write in a logical and sequential way  Failure to understand how to use a letter format  Common errors made by learners when writing | Ensure learners write different text types on a weekly basis so they are familiar with different formats and requirements e.g.:   * a story * descriptive paragraphs * poem * play script * letter.   Ensure that learners produce writing that is accurate, coherent, rich in language and original in ideas by using the process approach where learners plan, draft and edit their work.  Ensure that correct punctuation and spelling is used when learners write their own texts.  Give focused lessons on sentence construction and paragraph writing and the use of conjunctions to form cohesive sentences in order to help improve learners’ writing skills | Develop, deliver and mediate to districts the ANA: 2014 Diagnostic Reports and 2015 and 2016 Frameworks for Improvement.  Monitor and support mediation and implementation of ANA Diagnostic Reports and Improvement Plans in districts  Submit Quarterly ANA progress reports to DBE  Support districts and schools to plan and teach structured writing lessons as per CAPS  Ensure learners write different text types on a weekly basis using the process approach | Mediate to circuits and schools the ANA: 2014 Diagnostic Reports and 2015 and 2016 Frameworks for Improvement.  Monitor and support implementation of ANA Improvement Plans in schools.  Submit monthly ANA progress reports to province  Monitor and report on curriculum coverage, the teaching of structured language lessons  Workshop teachers on teaching language and using process writing to produce different text types | Implement the Remedial measures to improve classroom practice as per the 2015 and 2016 Frameworks for Improvement.  SMTs to form a School literacy team in the school   * Teachers to use the ANA analysis to plan and teach on passive/ structured writing lessons * Provide learners with opportunities to write different text types on a weekly basis so they are familiar with different formats and requirements as per CAPS   Use the process approach to writing so that learners plan and edit their writing |

**6. MATHEMATICS FRAMEWORK FOR IMPROVEMENT**

**6.1 GRADE 3**

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| **GRADE 3** | | | | | | | |
| **Numbers, Operations and Relationships** | | | | | | | |
| **Identified weaknesses** | | **Remedial measures to improve classroom practice** | **Responsibility** | | | | |
| **Province** | | **District** | **School** | |
| **QUESTION 17.2**  Learners who can no solve problems with sharing leading to fractions**.** | | * Fraction diagrams and charts to engage with during teaching and learning. * Engage learners in diagrammatic form and charts during lesson. * Practical approach involving manipulative work and use of concrete material. * Teach fraction names e.g. quarter as per CAPS. * The teacher should expose the learners to various strategies on how to solve problems that include fraction. * The teacher should use correct mathematical language e.g. one half,1 quarter etc. * Use of concrete material should be encouraged * Learners can draw their answers to prove that they understand the problem | * Monitor use to DBE workbooks and provincial resources, (Mathematical Proficiency, developing fluency in multiplication and division, Mathematics Hand book and DVD)   • Organize Maths content training workshops for curriculum advisors   * Monitor and support curriculum coverage as per CAPS requirements | | * Mediate and Monitor utilization of DBE workbooks and provincial resources, (Mathematical Proficiency, developing fluency in multiplication and division, Mathematics Hand book and DVD). * Organize Mathematics content gap   Training workshops for teachers.   * Monitor and support curriculum coverage as per CAPS requirements by conduct classroom visits (observe Maths lessons) and provide support to teachers. | The SMT’s and Teachers to:   * Ensure that learners are using DBE workbooks and provincial resources, (Mathematical Proficiency, developing fluency in multiplication and division, Mathematics Hand book and DVD) * Ensure that teachers attend the training and effectively implement. * Monitor the teaching of   Mathematics as per CAPS and the tracker for curriculum coverage | |
| **QUESTION 19**  Learners have difficulty in  Solving number problem involving sharing and grouping of whole numbers up to 800 | | * Use of arrays in Developing fluency in multiplication and division * Mental maths should be practised daily and all schools to be engaged in mental quiz competitions e.g. use of friendly numbers * Use of a number line strategy will enhance learner understanding of division * Expose learners to different problem techniques * Learners should solve daily life problems. * Read the word problem with understanding. * Allow learners to solve problem in their own ways and explain solution to the problem. | Conduct workshop on problem solving techniques and how to develop strong number sense | | Rollout problem solving techniques workshop and how to develop strong number sense | * Exposure of learners to different calculation strategies as per CAPS document. * More time to be given on developing number sense (Use of five dot frame and ten dot frame) and for place value use of flard cards * The teacher progress the learners all levels of counting. * To ensure that learners have a good understanding of basic operations and to develop strong number sense. **( Mathematical Proficiency –Section 2- Pg 15....)** * Adhere to the teaching plans **(Assessment Framework)** * Teachers need to teach numeriosity and magnitude of numbers * Reinforcement basic operations teaching * Reinforcement of mental mathematics in the form of number talk where learners are expected to share their strategies | |
| Learners are still struggling with grouping and sharing, any strategy should have helped the learners not only mentally as this strategy has not yet been developed. | | * Expose the learners to different Mathematical strategies as suggested in the CAPS document. * Learners should be introduced to: * Friendly numbers * More practice is need to the learners * Mental mathematics activities to be done daily   Learners should do oral and written activities | * Conduct workshop on problem solving techniques for curriculum advisors and lead teachers * Monitor utilization of DBE Workbooks * Monitor and support curriculum coverage as per CAPS requirements * Monitor Maths clubs | | * Mediate the workshop on problem solving techniques for teachers * Monitor utilization of DBE Workbooks * Conduct classroom visits (observe Mathematics lessons) and provide support to teachers. * Monitor and mentor maths club | * Expose learners to different problem solving techniques * Ensure that DBE Workbooks are effectively utilized * Use Workbook activities * Use ANA exemplar activities * Engaged learners to maths clubs activities | |
| **QUESTION 22.**  Difficulty in solving addition and subtraction problems | | * Expose learners to different problem techniques | * Conduct content gap workshop on different strategies (breaking numbers/ making friendly numbers/ uses of doubles and near doubles/ compensation/ adding up/ keeping the constant difference. * Monitor use of relevant resources (Dot card/ abascus/ number lines and number grid/ DVD) | | * Provide support for teachers through workshops on solving problems using number lines * Monitor the use of relevant resources (Dot card/ abascus/ number lines and number grid/ DVD) | * Mental maths should be practised daily and all schools to be engaged in mental quiz competitions e.g. use of friendly numbers * Expose learners to different strategies * Ensure that teachers are using relevant resources (Dot card/ abascus/ number lines and number grid/ dvd) * Strengthening 10 minutes for mental mathematics doing number talk (where learners share their different strategies of solving problems | |
| **QUESTION 22.**  Learners could not subtract they has just add the numbers and has demonstrated the lack of understanding of place value. He used vertical column method | | * Exposure of learners to different calculation strategies as per CAPS document. * More time to be given on developing number sense (Use of five dot frame and ten dot frame) and for place value use of flard cards * The teacher is advised to introduce learners to all levels of counting. * To ensure that learners have a good understanding of basic operations and to develop strong number sense. ( Mathematical Proficiency –Section 2- Pg 15....) * Adhere to the teaching plans (Assessment Framework) * Teachers need to teach numeriosity and magnitude of numbers | * Conduct content gap workshop on different strategies (breaking numbers/ making friendly numbers/ uses of doubles and near doubles/ compensation/ adding up/ keeping the constant difference. * Monitor use of relevant resources (Dot card/ abascus/ number lines and number grid/ DVD) | | * Provide support for teachers through workshops on solving problems using number lines * Monitor the use of relevant resources (Dot card/ abascus/ number lines and number grid/ DVD) | * Mental maths should be practised daily and all schools to be engaged in mental quiz competitions e.g. use of friendly numbers * Expose learners to different strategies * Ensure that teachers are using relevant resources (Dot card/ abascus/ number lines and number grid/ dvd) * Strengthening 10 minutes for mental mathematics doing number talk (where learners share their different strategies of solving problems | |
| **Money**  Reading prices and solve problems | | * Practical engagement with South African currency namely coins and bank notes * Convert cents and rands * Read prices in rand and cents * Solve money problems and calculate change * Use of a number line strategy to calculate change | * Organise Maths content training workshops for curriculum advisors * Monitor and support curriculum coverage as per CAPS requirements | | * Training workshops for teachers * Conduct classroom visits (observe Maths lessons) and provide support to teachers. * Monitor focused Teaching on areas of weaknesses | * Teach money practically | |
| **SPACE AND SHAPES** | | | | | | | |
| **Position, orientation and views:**  Difficulty in following directions from one place to another on an informal map | * Get learners to follow instructions/directions to move around in the classroom and the school. * Give learners sufficient practice to : * interpret and read informal maps * draw informal maps * find objects on maps * follow directions from one place to another on an informal map | | | * Distribute the ANA exemplars | * Provide support for teachers through workshops. | | * Teach at least 2 Lessons per week based on Space and Shape * Conduct practical and written activities * Use Workbook activities * Use ANA exemplar activities to assist in developing assessment tasks |
| **MEASUREMENT** | | | | | | | |
| Difficulty in telling the time on an analogue clock | * Work in small groups and allow learners to manipulate the analogue clock to show times using hours, half hours, quarter hours and minutes. * Show different times and ask learners to tell the time. Start with hour, half hour, and quarter hour before including minutes. * Get learners to practice to: * Write down the time shown on an analogue clock * Draw the hands on a clock to show the time indicated * Answer word problems on time   **Reference: Numeracy Handbook For The Foundation Phase Page 129 To 131** | | | * Monitor the mediation of content gap workshop on measurement for curriculum advisors and lead teachers | * Mediate content gap on workshop on measurement * Encourage teachers to participate on how I teach demonstration lessons where they share best practices | | Teach learners   * to write down the time shown on an analogue clock * Draw the hands on a clock to show the time indicated * Engage learners in answering word problems on time * Allow learners to manipulate the analogue clock to show times using hours, half hours, quarter hours and minutes. * Use ANA exemplars to familiarise learners with the various styles of setting |

**6.2 GRADE 6**

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| **Intermediate Phase (Grades 6): Mathematics** | | | | | | | |
| **Numbers, Operations and Relationships** | | | | | | | |
| **Identified weaknesses** | **Remedial measures to improve classroom practice** | | **Responsibility** | | | | |
| **Province** | **District** | | **School** | |
| **Four basic operations**  Learners’ difficulty to multiply and divide is primarily based on the lack of understanding of place value, properties of 0, multiples, doubling and halving. They opted to use long division which they have not mastered.   * Getting 5 instead of 0 when multiplying by 5. * Couldn’t complete long division/ calculated incorrectly | * Explore the properties of 0 and 1 through investigative approach. * Expose learners to the order of operations by applying (BODMAS/BOMDAS) * Various strategies of addition, subtraction, multiplication and division should be emphasised as prescribed in the CAPS document | | * Conduct Provincial   Workshops on ANA  findings and remedial  plan   * Conduct Maths content training   workshops  for Curriculum Advisors through Error analysis and misconceptions workshops | * Conduct district   Workshops on ANA  findings and remedial plan   * Encourage collegiality among teachers so as to share best practices. | | * Utilise exercises from the workbooks. textbooks and the guidance from the CAPS. * Expose learners to appropriate methods of dealing with basic operations, order of operations and various techniques for multiplication and division as per CAPS document. * Use ANA exemplars to familiarise learners with the various styles of setting | |
| **Fractions :**   * Learners treated the decimals as whole numbers when identifying the place value as a result a hundredth was regarded as unit. * Subtraction of fractions was treated as whole numbers where learners displayed lack of understanding of rules for addition and subtraction of fractions where they subtracted denominators. * The majority of the learners have shown difficulty in understanding the value of the underlined digit in decimals and treated the number representing hundredths as a unit. | * When teaching place values the focus should not be in whole numbers only but to include decimal numbers as the policy prescribes. * The teaching of fractions should start from using concrete objects to enhance conceptual development before moving to abstract manipulations of fractions * Teaching of fractions should start from simple proper fractions before introducing mixed * Encourage various investigative methods e.g. paper folding, sketches, etc. for conceptual development of addition/ subtraction of fractions | | * Conduct Maths content training   Workshops on Fractions for Curriculum Advisors through Error analysis and misconceptions workshops   * Monitor optimal utilisation of workbooks and textbooks * Set provincial   Quarterly common  tests | * Mediate Maths content workshops on fractions. * Monitor the extent of the work covered on fractions in both formal and informal tasks. * Track curriculum coverage on the implementation of the suggested teaching strategies on basic operations. * Monitor optimal utilisation of workbooks and textbooks | | * Teaching should not only concentrate on whole numbers but also on decimals when teaching place. * The meaning of a fraction should be emphasised. * Use of apparatus and diagrams to develop different ways of thinking about fractions should be enhanced. * Activities given should also address the issue of fractions used in problem solving contexts. * To use real life examples to develop the concept better. * Use of Maths dictionaries is encouraged to develop their vocabulary | |
| **Word sums**  In questions 8, 12 and 21, responses of learners show that, they are unable to:   * Interpret word problems correctly * Use the given information appropriately, this prevailed when learners incorrectly grouped the sweets instead of using long division.   . | * Using concrete material for repeated addition and repeated subtraction assist with conceptual understanding of multiplication and division; however learners should be further scaffolded to progress from these elementary long methods of multiplication and division to shorter abstract methods for development of procedural fluency. * More activities based on word sums should be given to learners to enhance reading with understanding. | | * Strengthen co-operative work with language subject co-ordinators to acquire the skills such as reading, writing, interpretation, comprehension * Conduct Maths content training * Workshops on Problem solving for Curriculum Advisors through Error analysis and misconceptions workshops * Set provincial   Quarterly common  tests | * Strengthen co-operative work with language subject co-ordinators to acquire the skills such as reading, writing, interpretation, and   comprehension   * Information sharing sessions through “How I Teach” workshops in different clusters must be encouraged. * Encourage teachers to develop their own word problems. | | * Work closely with Language Subject advisors to acquire more skills such as reading and viewing, writing interpretation and comprehension * Strengthen correct use of Maths language e.g. **sum** means add. * Translating certain words into mathematics language. * Use of Maths dictionaries. * Procedures of answering word problems should be taught. * Use of DBE workbooks and textbooks for more activities | |
| **Patterns, Functions and Algebra** | | | | | | | |
| Learners had a problem in completing a number sentence  Some learners still cannot generalise the pattern, this has been evident when they:   * Filled in the input and output in the table, incorrectly * Could not give the appropriate answer for question 28 which involved Maths clubs   (unseen non-routine) | * Ensure to teach properly the properties of inverse, (additive and multiplicative inverses) as well as the concept of identity * Equivalent forms of different descriptions of the same relationships should be taught, e.g. learners should describe the pattern verbally, tabulate and illustrate the same pattern in a flow diagram, and represent the same pattern in a number sentence thus leading to a rule * Non routine patterns not limited to common difference and ratio should also be taught | * Support district officials by conducting focused workshops * Conduct regular monitoring to ensure curriculum coverage * Monitor the   Implementation of the 2015 ANA Improvement Plan.   * Conduct Maths content workshops for Curriculum Advisors | | * Support teachers by conducting focused workshops through “how I teach” professional development forums * Conduct regular monitoring to ensure curriculum coverage. * Provide on-site classroom support to teachers * Monitor the   Implementation of the 2015 ANA  Improvement Plan. | | * Use of DBE workbooks and textbooks for more activities * Implement 2015 ANA   Improvement Plan.   * SMT should ensure regular monitoring curriculum coverage. * When teaching patterns generally teachers should ensure that learners can identify patterns, conjecture, test the conjecture before generalising | |
| **Space and Shape (Geometry)** | | | | | | | |
| Learners were unable to cope with some Geometric concepts. This prevailed when they were unable to:   * associate angles in a given object from a real life setting * compare 2-D shapes in terms of properties. * View objects from a given position * identify lines of symmetry of a given shape | * Mathematics teaching should not only be limited to classroom but be applied in real life situation. Learners can be made to identify angles from the environment * Properties of 2-D shapes through investigation e.g. measuring of sides, paper folding etc * Start by using simple everyday concrete objects that learners can view from different directions before using abstract shapes of 3D objects drawn on paper * Lines of symmetry can be taught by using mirrors and paper folding to develop the concept | * Conduct Maths content training workshops on Geometry for Curriculum Advisors through Error analysis and misconceptions workshops * Monitor the   implementation  of the 2015 ANA  Improvement  Plan.   * Conduct regular district monitoring to ensure curriculum coverage | | | * Conduct Maths content training workshops on Geometric concepts, including practical demonstration workshops on properties of 2-D shapes e.g. using paper folding and use of mirrors to illustrate lines of symmetry * Monitor the   Implementation of the 2015 ANA Improvement   * Conduct regular monitoring to ensure curriculum coverage. | | * Teach geometric shapes to include environment in order to identify angles in a real life setting   .   * Implement practical demonstration on properties of 2-D shapes and lines of symmetry e.g. using paper folding and use of mirrors to illustrate lines of symmetry * Learners should practically experiment viewing of objects from various objects in the classroom, then draw own observation thereof. |
| **Measurement** | | | | | | | |
| **Unit Conversions**  Learners show lack of understanding of conversions of units generally. This prevailed when learners:   * Could not convert ml to l. * Could not convert kg to g.   **Time:**  Learners cannot calculate time difference based on different time zones. This prevailed when they were are unable to :   * Calculate time difference based on time zones for different countries | Learners have to be practically taught about the relationship between millilitres, litres and kilolitres, g and kg and have a sense of how much each unit is e.g. a millilitre to a litre, g to a kg   * Learners should be taught to read time zone maps and do calculations using zoned maps. * Use of the map of the world with different times. | * Conduct Maths content training workshops on Measurement for Curriculum Advisors through Error analysis and misconceptions workshops * Conduct regular district monitoring to ensure curriculum coverage | | | * Conduct content workshop on measurement addressing misconceptions * Teachers need to be empowered on practical demonstrations using containers calibrated in different units. * Conduct regular school monitoring to ensure curriculum coverage * Provide on-site classroom support to teachers and ‘How I Teach’ sessions. | | * Bring containers to class and allow learners to measure same volume of water using two containers calibrated differently one in millilitres and the other in litres or in grams and kilograms, and then allow them to draw conclusions * Use wall clocks to calculate time zones * Work collaboratively with Social Sciences teachers in teaching time zone * Practically demonstrate to learners how to read time zone maps with understanding and do calculations using zone maps. |
| **Data Handling** | | | | | | | |
| However, learners could not interpret data in a fraction form. | Fractions should be dealt with thoroughly in Content Area 1  Pie chart should be taught including fractions | * Conduct Maths content training   workshop Data Handling for Curriculum Advisors through Error analysis and misconceptions workshops   * Conduct regular district monitoring to ensure curriculum coverage | | | * Provide on-site classroom support to teachers. * Conduct Data Handling workshops addressing misconceptions * Monitor implementation of content workshop | | * The meaning of a fraction should be emphasised. * Use of apparatus and diagrams to develop different ways of thinking about fractions should be enhanced. * Activities given should also address the issue of fractions used in problem solving contexts. |

**6.3 GRADE 9**

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| **Senior Phase (Grade7- 9): Mathematics** | | | | |
| **Numbers, Operations and Relationships** | | | | |
| **Identified weaknesses** | **Remedial measures to improve classroom practice** | **Responsibility** | | |
| **Province** | **District** | **School** |
| **Simple interest and compound interest**  Learners could not identify and use the appropriate formulae  involving compound interest and simple interest | * Since Financial Mathematics is dealt with in the context of word problems, the teaching of word problems should be done systematically to enhance learners’ ability to interpret, understand, select critical information and use that information to calculate the answer. * There should be an understanding that when using r in the formula for SI, is always out of 100, therefore * And when using , .( i.e. =)   Note : | * Strengthen the DBE workbooks during the annual review. * Mediate the workbooks to teachers to adequately address financial mathematics. * Monitor curriculum implementation and coverage. * Support subject advisors during provincial meetings. * Monitor curriculum implementation. | * Conduct workshops on financial mathematics. * Monitor curriculum coverage. * Information sharing sessions in financial mathematics should be encouraged. * Administration of common tasks on the topic to familiarize learners with the questioning style | * Teach word problems systematically to enhance learners’ ability to interpret, understand, select critical information and use that information to calculate the answer. * Differentiate between compound interest and simple interest and show learners how to use relevant formulae appropriately. * Learners must be encouraged to change the subject of the formula in order to calculate A, P ,n, r and i. * In teaching the concept emphasise the equivalence of t and n. When using the formula for SI, is the rate which is a percentage (out of 100), therefore * Note, when using ,**.**( i.e. =) |
| **Numbers, Operations and Relationships** | | | | |
| **Identified weaknesses** | **Remedial measures to improve classroom practice** | **Responsibility** | | |
| **Province** | **District** | **School** |
| **Squares and square roots, Cubes and cube roots**  Learners were not able to master problems involving square roots of square roots.  When squaring binomials, the middle term is not calculated. | * Teachers must cover these topics with integers initially and then progress to algebraic terms and expressions later. * Learners may use concrete objects for improved understanding of squares and square roots. The same hold true for cubes and cube roots. | * Support subject advisors during provincial meetings. * Monitor curriculum implementation. | Continued workshops and monitoring and support of teaching in this area is vital. | * Teachers must cover these topics with integers initially and then progress to algebraic terms and expressions later. * Learners may use concrete objects for example, the 3 by 3 square below could be used to show the relationship between the square of 3 and the square root of 9. * Here 9 represents the area of the square and 3 (the square root) is represented by the length of each side.  |  |  |  | | --- | --- | --- | | 3  9 |  |  | |  |  |  | |  |  |  |   The same idea could be extended to cubes and algebraic terms. Here, represents the volume of the cube and (cube root of ) is represented by the length of each side (edge) |

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| **Patterns, Functions & Algebra** | | | | |
| **Identified weaknesses** | **Remedial measures to improve classroom practice** | **Responsibility** | | |
| **Province** | **District** | **School** |
| **Expressions**  Unable to simplify algebraic fractions | * Start with common fractions before introducing algebraic fractions. Competency in common fractions is a prerequisite for competency in algebraic fractions. | * Support subject advisors during provincial meetings. * Monitor curriculum implementation. * Monitor the availability of CAPS to each teacher in the province. * Monitor the availability and utilization of workbooks for each learner. * Monitor Curriculum coverage. | * Support teachers during workshops and on-site classroom visits. * Monitor curriculum implementation and coverage. * Use DBE workbooks to support teachers. * Monitor the availability of CAPS to each teacher in the province. * Monitor the availability of workbooks for each learner. | * Teach ‘like’ and ‘unlike terms’ * Teach common fractions before learners are exposed to algebraic fractions. * Emphasise the rules of simplifying fractions especially when the denominators are different. * Teach learners how to find the LCD and its importance in simplifying fractions. * Show the difference between using the LCD in an expression as opposed to an equation. * Use DBE workbooks to support learners. * Use CAPS to seek more clarity on the scope and methods of teaching of expressions. |
| **Factorisation**  Lack of understanding of the processes involved in factorisation. | * Systematically teach the sequence of steps used in factorisation. * Make learners aware that simplification of expressions and factorisation of expressions are reverse processes. * Effectively, factorisation of an expression is writing the expression as a single term. | * Support subject advisors during provincial meetings. * Monitor curriculum coverage and implementation of CAPS. * Ensure that there is enough human resources at all levels. | * Conduct focused workshops for teachers to address the effective teaching and learning of factorisation. * Monitor that workshop concepts are implemented at classroom level. * Monitor curriculum coverage. | Systematically teach the steps used in factorisation:   * start by checking for a common factor; and/or * if the expression has two terms check if difference of two squares can be used; * Teachers must guard against statements such as “ look for two squares with a minus sign in between” as noted in the counter example:   -16+*x*2   * It is recommended that **varied** examples of difference between squares be given to emphasise and master the concept. For example, * if the expression has 3 terms factorise a trinomial * if the expression has 4 terms use grouping of terms and factor out common factors. * Make learners aware that simplification of expressions and factorisation of expressions are reverse processes. * Effectively, factorisation of an expression is writing the expression as a single term |
| **Equations**  Difficulty applying the knowledge of inverses to solve equations  In many cases the inability of learners to solve equations has little or no relationship with their inability to apply additive and multiplicative inverses. Their lack of understanding and applying factorisation and simplification of expressions leads to poor performance in this area. | * Thorough training should be conducted to assist teachers and learners as suggested below: * The teaching of equations should be preceded by the teaching of integers. * Addition and subtraction of integers should be taught simultaneously to demonstrate the concept of additive inverse. * Multiplication and division of integers should be taught simultaneously to demonstrate the concept of a multiplicative inverse. | .   * Conduct a workshop to provide knowledge and skills regarding the teaching of **integers** and **equations** to all subject advisors in the province. * This can be conducted during the scheduled curriculum meetings between provincial coordinators and subject advisors in each province. | * Conduct focused workshops for teachers to address the effective teaching and learning of **integers** and **equations**. * Emphasise the multiplicative identity property of numbers and additive identity property of numbers * Use DBE workbooks to enable teachers to use them to teach integers and solving equations. | * Teach integers before teaching equations for learners to acquire the requisite knowledge and skills of solution of equations. * Teach addition and subtraction of integers simultaneously to demonstrate the concept of additive inverses. Do the same with multiplication and division to demonstrate multiplicative inverses. * Initially, when solving algebraic equations, learners must be encouraged to solve it by inspection and to check solutions by substitution   80/16 = 5  *x*+3=40  *x*=37  Learners must have enough practice in factorising and simplifying expressions including squares of binomials in order to solve equations of the following type:  (*x*-2)2+3*x*-2=(*x*+3)2 and  *x*2-5*x*-6=0   * Use DBE workbooks to enable learners to do more practice exercises on integers and solving equations. |
| **Numeric and geometric patterns**  Learners are more familiar with linear patterns than non-linear patterns.  Learners have difficulty in generating formulae for patterns other than linear.  The learner’s inability to solve equations further disadvantages him/her to find n in Tn. | * Teach all the different types of patterns as presented in the CAPS. * Use the manipulative approach when dealing with patterns (eg. Matches, counters, etc…) * In some cases, use geometric patterns to generate a number pattern and present the pattern in a tabular form. | * Support subject advisors by conducting focused workshops in this regard. * Conduct monitoring to ensure effective curriculum coverage and implementation. | * Support teachers by conducting focused workshops in this regard. * Conduct regular monitoring to ensure curriculum coverage * Provide exemplars to teachers. | * Teach all types of patterns presented in the CAPS. * Use geometric patterns to generate and teach number patterns. * In many cases it is easier to find the formula for geometric patterns from the structure of the diagrams. * Allow learners to generate their own patterns and describe them algebraically and in their own words. * Teach the flow diagrams (input and output values) as another way to enhance the understanding of number pattern. * In linear patterns, show the relationship between the common difference, the coefficient of n and the amount of increase or decrease in a pattern. Similarly, show the relationship between the initial amount (before the increase or decrease) and the constant term in the generated formula. * Emphasise the use of correct algebraic language. |
| **Straight Line Graphs**  Many learners are not able to determine the value of the gradient from a given graph.  There is an inability on the part of the learners to relate the gradient of the graph to the coefficient of *x* the equation: y=m*x*+c  Similarly, learners do not see the equivalent relationship between the y-intercept of the graph and the constant term in the above equation of the line. | * Teachers must use the idea that the gradient equals the vertical distance between two pints on a line divided by the horizontal difference. * This can be done in a very practical way using graph paper and a ruler. Learners should be encouraged to repeat this process between any other points on the line in order to discover that the gradient between any TWO points is exactly the same. * Teachers must design investigations that will highlight the relationships between the line graph, its gradient and y-intercept with the coefficient of x and the constant term respectively in the equation: y=m*x*+c | * Support subject advisors by conducting focused workshops on the use of ICT (GeoGebra, SketchPad, etc…) in this regard. | * More workshops need to be conducted in this topic. * The use of ICTs (dynamic software such as GeoGebra) should be encouraged to teach or consolidate concepts. * See GeoGebra diagram below: | * Teachers must use the idea that the gradient equals the vertical distance between two points on a line divided by the horizontal difference between them. * This can be done in a very practical way using graph paper and a ruler. Learners should be encouraged to repeat this process between any other points on the line in order to discover that the gradient between any TWO points is exactly the same. * Teachers must design investigations that will highlight the relationships between the line graph, its gradient and y-intercept with the coefficient of and the constant term respectively in the equation y=m*x*+c |
| **Space and Shape (Geometry)** | | | | |
| **Straight line geometry**  Learners did not grasp the relationship between corresponding angles, alternate angles, vertically opposite angles and co-interior angles. | * A good understanding of straight line geometry is a prerequisite for proficiency in dealing with problems involving congruency and similarity. * Use practical approach whenever possible e.g. paper folding and investigative methods to generate a general rule | Monitoring and support to ensure curriculum coverage. | * Conduct Straight line Geometry workshops with teachers. * Advise teachers to teach straight line geometry thoroughly in Grades 7 and 8 to maximise learner performance in Grade 9. * Introduce the development of geometric concepts through the use of dynamic software. (GeoGebra, SketchPad, etc…) | * Ensure mastery of relationships between pairs of angles. * Emphasise different symbols used to denote parallel lines and equal lines. * Ensure that learners are proficient in solving algebraic equations in order to solve geometry problems. |
| **Triangles:**  Congruency and Similarity. | * Enhance conceptual understanding of congruency and similarity. * Link similarity with the concept of enlargement in the previous grades | * Ensure that all schools have textbooks, workbooks and CAPS. * Strengthen monitoring and support for districts and schools. | * Conduct workshops to address teaching strategies for Geometry. * Introduce the development of geometric concepts through the use of dynamic software. (GeoGebra, SketchPad, etc…) * Support teachers during school visits on how to structure assessment to cater for different cognitive levels, including questions that require learners to justify their answers. * Strengthen monitoring and support. | * Clearly distinguish between similarity and congruency so as to mitigate any confusion between the two concepts. * Use construction so that learners can investigate the conditions of congruency and similarity. * Teach learners to always identify the figure in which they are working by the use of colour. * Expose learners to different levels of questions, especially those that require problem solving and complex procedures. |
| **Measurement** | | | | |
| **Area of 2-D shapes.**   * Learners had an inability to make maximum use of the given information such as properties of 2-D shapes and relationships between their angles and sides. * Most learners struggled to determine the ‘shorter’ side of the right angled triangle. | * Teach the area of 2D shapes before surface area of 3D objects to enhance understanding among learners. * Area should be taught in a very practical way using square cut-outs, measuring instruments etc…. . | * Ensure that subject advisors are familiar with the content that addresses volume and surface area in CAPS. * Care should to be taken when setting questions in such a way that a solution may **not be** obtained using incorrect methods on given information.. | * Conduct focused workshops to address surface area and volume of 3D objects. * Support teachers through school visits. * Introduce the development of geometric concepts through the use of dynamic software. (GeoGebra, SketchPad, interactive whiteboards etc…) | * The teaching of area of an ordinary 2D shape should immediately be followed by the teaching of the surface area of triangular prisms (3D objects). * Emphasise the use of nets when calculating the surface area of a triangular prism. * Use appropriate formulae to calculate area, surface area and volume. * Care should to be taken when setting questions in such a way that a solution may **not be** obtained using incorrect methods on given information. |