



<u>FACULTY</u>	: Education
<u>DEPARTMENT</u>	: Childhood Education
<u>CAMPUS</u>	: SWC
<u>MODULE</u>	: TEACHING METHODOLOGY AND PRACTICUM: SCIENCE AND TECHNOLOGY (MPSCTB3)
<u>SEMESTER</u>	: Second
<u>EXAM</u>	: January 2021

<u>ASSESSOR(S)</u>	: MRS M PENN		
<u>MODERATOR</u>	: MR ML MOLAOI (UJ)		
<u>DURATION</u>	: Take-home Exam	<u>MARKS</u>	: 100

NUMBER OF PAGES: 4 PAGES

INSTRUCTIONS:

1. Answer ALL THE QUESTIONS.
 2. Number your answers clearly.
 3. This paper will be released on blackboard in the assessment folder 48 hours before the due date of submission.
 4. Your work should be typed in Times New Romans/Arial font, 1.5 spacing and must include a cover page with your details.
 5. A declaration of authenticity must be submitted with your exam submission.
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QUESTION 1: The curriculum and Lesson planning

The Curriculum and Assessment Policy Statement (CAPS) represents the current curriculum document for school subjects from R-12. This curriculum was developed as an improved set of guidelines for schooling after several curriculum reforms in South Africa.

- 1.1 Discuss three (3) of the general aims of the CAPS curriculum. (9)
 - 1.2 Critically analyse some of the problems that were experienced with the Revised National Curriculum Statement (RNCS). (12)
 - 1.3 In teaching a Natural Sciences and Technology lesson on the “properties of materials” in grade 4, explain how you would infuse the three (3) specific aims of the curriculum as part of your lesson. (9)
- [30]**

QUESTION 2: Pedagogical Content Knowledge

Based on their pedagogical content knowledge (PCK), teachers translate subject content knowledge into useful forms of representations of ideas in the form of “powerful analogies, illustrations, examples, explanations and demonstrations” to facilitate comprehension by students (Shulman, 1986).

- 2.1 Discuss how you will use three (3) of the above representations to teach “separation of mixture” in the Natural Sciences and Technology classroom. (12)
 - 2.2 Which of the specific aims of the CAPS curriculum is related to context based teaching and learning? Justify your answer. (6)
 - 2.3 Discuss the different models of context-based teaching and learning. (12)
- [30]**

Question 3: Designing and integrating teaching resources

The use of posters in the Natural Sciences and Technology classroom provides an opportunity to pair visual learning with textbook reading, lecture, and other teaching and learning resources.

- 3.1 Discuss five (5) features of a good poster. (10)
- 3.2 Design your own poster for teaching any natural Sciences and Technology concept (see Appendix A: a checklist, which will guide your design). (10)
- [20]

Question 4: Assessment

A rubric is a scoring tool, which explicitly represents the performance expectations for an assignment or piece of work and enables the teacher to make reliable judgments about student work while allowing learners to self-assess.

- 4.1 Explain some of the pros and cons of using rubrics as an assessment tool in a Natural Sciences and Technology classroom. (12)
- 4.2 Discuss the relevance of including the different levels of the revised Bloom's taxonomy when designing assessments. (8)
- [20]

TOTAL: 100

Appendix A: Checklist for Poster design

Criteria	(2 marks allocated for every criterion attained X 5 = 10 marks)	Yes/No
Topic and images	The poster includes a topic, the correct images for the selected topic and all required elements as well as additional information.	
Content	All items of importance on the poster are relevant and correct in terms of the scientific knowledge expected. They are clearly labelled with labels that can be read easily.	
Coherence	The Poster information is coherent and shows flow, whereby learners can understand the flow of information from one step to another.	
Attractiveness	The poster is exceptionally attractive in terms of design, layout, and neatness.	
Grammar	There are no grammatical/mechanical mistakes on the poster.	

*****The marking of poster design using this checklist is primarily to establish students' ability to design good posters for science and technology teaching. A mark of 0.5 may be allocated in instances where the student provides a partial response and 0 mark for those sections that are not covered.***