Grade 2 Maths and Science Assessment

Introduction

The assessment for Grade 2 Maths and Science is designed to evaluate students' understanding of number sense, addition, and sequencing, as well as their ability to apply the Split Strategy to solve 2-digit addition problems without regrouping. The assessment is divided into four sections, each aligned with the learning objectives and outcomes of the Australian Curriculum.

Learning Objectives

The learning objectives for this assessment are:

1. Apply the Split Strategy to solve 2-digit addition problems without regrouping
2. Demonstrate understanding of number sense by counting and sequencing numbers up to 200
3. Round numbers to the nearest 100
4. Build sentences using the number 10 in various contexts

Example of the Split Strategy

The Split Strategy involves breaking down a 2-digit number into tens and ones. For example, the number 45 can be split into 40 (tens) and 5 (ones).

Assessment Structure

The assessment will consist of a combination of question types, including multiple-choice, short-answer, and open-ended questions. The questions will be designed to cater to different learning styles and abilities, ensuring that all students have an equal opportunity to demonstrate their understanding.

Section 1: Multiple-Choice Questions

This section will consist of 5 multiple-choice questions that assess students' understanding of number sense and addition.

Question 1 [1 mark]

What is the sum of 45 + 27?

A) 60

B) 62

C) 72

D) 82

Question 2 [1 mark]

Which of the following numbers is closest to 100?

A) 50

B) 75

C) 90

D) 110

Section 2: Short-Answer Questions

This section will consist of 5 short-answer questions that assess students' understanding of number sense, addition, and sequencing.

Question 3   [2 marks]

Write a sentence using the number 10 in the context of time.

Question 4   [2 marks]

Sequence the following numbers in order from smallest to largest: 120, 90, 110, 130

Section 3: Open-Ended Questions

This section will consist of 5 open-ended questions that assess students' ability to apply the Split Strategy and demonstrate their understanding of number sense and addition.

Question 5   [4 marks]

Use the Split Strategy to solve the following problem: 56 + 24 = ?

Question 6   [4 marks]

Create a number line with numbers from 0 to 200. Mark the numbers 10, 50, 100, and 150.

Section 4: Practical Activity

Students will participate in a practical activity where they will count and sequence numbers up to 200 using number cards or counting blocks.

Practical Activity   [5 marks]

Count and sequence the numbers up to 200 using number cards or counting blocks.

Marking Guide and Rubric

The marking guide will be based on the following criteria:

- Accuracy and completeness of answers
- Understanding of number sense and sequencing
- Ability to apply the Split Strategy to solve 2-digit addition problems without regrouping
- Clarity and coherence of written work

Rubric

The rubric will be as follows:

- Multiple-Choice Questions: 1 mark per question
- Short-Answer Questions: 2-3 marks per question
- Open-Ended Questions: 4-5 marks per question
- Practical Activity: 5 marks

Implementation Guidelines and Differentiation Options

The implementation guidelines will be as follows:

- Time allocation: 60 minutes
- Resources: Number cards, counting blocks, worksheets, and pencils
- Administration tips: Ensure that students have access to all necessary resources, and provide clear instructions and examples before starting the assessment.

Differentiation Options

The differentiation options will be as follows:

- For students with special needs: Provide additional support and accommodations, such as extra time, a reader, or a scribe.
- For English language learners: Provide bilingual resources and support, such as glossaries and visual aids.
- For gifted and talented students: Provide extension activities, such as more complex problems or open-ended questions.

Assessment and Evaluation

The assessment and evaluation of student learning will be based on the following criteria: understanding of number sense, ability to apply the Split Strategy, and demonstration of sequencing skills. The assessment will consist of a combination of multiple-choice, short-answer, and open-ended questions, as well as a practical activity.

Example of Assessment Question

What is the sum of 45 + 27? Use the Split Strategy to solve the problem.

Evaluation Rubric

The evaluation rubric will be as follows:

- Accuracy and completeness of answers (40%)
- Understanding of number sense and sequencing (30%)
- Ability to apply the Split Strategy (20%)
- Clarity and coherence of written work (10%)

Teaching Strategies and Resources

The teaching strategies and resources used to deliver this unit will include: direct instruction, guided practice, independent practice, and formative assessments. The resources used will include: number cards, counting blocks, worksheets, and online resources.

Case Study: Effective Use of Number Cards

A teacher used number cards to teach students about number sense and sequencing. The students were given a set of number cards and asked to sequence them in order from smallest to largest. The teacher then used the number cards to demonstrate the Split Strategy and had the students practice using it to solve addition problems.

Resource List

The following resources will be used to deliver this unit:

- Number cards
- Counting blocks
- Worksheets
- Online resources (e.g. math games, videos)

Accommodations and Modifications

Accommodations and modifications will be made for students with special needs, English language learners, and gifted and talented students. These may include: extra time, a reader, a scribe, bilingual resources, and extension activities.

Example of Accommodation

A student with a learning disability may be given extra time to complete the assessment, or may be provided with a reader to assist with reading the questions.

Modification Strategies

The following modification strategies will be used:

- Extra support and accommodations for students with special needs
- Bilingual resources and support for English language learners
- Extension activities for gifted and talented students

Conclusion

In conclusion, this unit plan is designed to teach students about number sense, addition, and sequencing using the Split Strategy. The assessment and evaluation of student learning will be based on a combination of multiple-choice, short-answer, and open-ended questions, as well as a practical activity. Accommodations and modifications will be made for students with special needs, English language learners, and gifted and talented students.

Case Study: Effective Implementation

A teacher implemented this unit plan and saw significant improvement in student understanding of number sense and addition. The teacher attributed the success to the use of the Split Strategy and the accommodations made for students with special needs.

Recommendations for Future Implementation

The following recommendations are made for future implementation:

- Continue to use the Split Strategy to teach addition
- Make accommodations and modifications for students with special needs, English language learners, and gifted and talented students
- Use a variety of teaching strategies and resources to engage students and promote learning

Appendix

The appendix includes additional resources and information to support the implementation of this unit plan.

Example of Additional Resource

A worksheet with additional practice problems using the Split Strategy.

Glossary of Terms

The following terms are defined:

- Split Strategy: a method of solving addition problems by breaking down numbers into tens and ones
- Number sense: the ability to understand and work with numbers
- Sequencing: the ability to put numbers in order from smallest to largest

References

The following references were used to support the development of this unit plan:

- National Council of Teachers of Mathematics. (2014). Principles to Actions: Ensuring Mathematical Success for All.
- Common Core State Standards Initiative. (2010). Common Core State Standards for Mathematics.

Additional Resources

The following additional resources are available:

- Online math games and activities
- Math worksheets and practice problems
- Professional development opportunities for teachers

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