

CALCULATOR SPELLING

Performance Standard (6B/6C/8C).F

Create and solve number sentences on a calculator accordingly:

- *Mathematical knowledge:* Solve complex number sentences and word problems using multiple operations, order of operations, field properties, whole numbers, decimals and fractions.
- *Strategic knowledge:* Use appropriate strategies to solve problems so that the solutions to the number sentences will spell words on the calculator when the calculator is turned upside down.
- *Explanation:* Explain completely and clearly what was done and why it was done.

Procedures

1. *In order to investigate, represent, and solve problems using number facts, operations and their properties, algorithms, and relationships (6B), compute and estimate using mental mathematics, pencil-and-paper methods, calculators, and computers (6C) and solve problems using systems of numbers and their properties,* students should experience sufficient learning opportunities to develop the following:
 - Recognize and use inverse relationships of addition and subtraction, multiplication and division to simplify computations and solve problems.
 - Solve multiplication number sentences and word problems with whole numbers, decimals and familiar fractions.
 - Analyze algorithms for computing with whole numbers, familiar fractions, and decimals and develop fluency in their use.
2. Introduce students to creating words from numbers displayed on the calculator when the calculator is turned upside down.
3. Provide each student a copy of the “Calculator Spelling” recording sheet and the rubric. Have students review and discuss the task to be completed and how the rubric will be used to evaluate it.
4. Ask students to create three number sentences using 3045 as their target number. (3045 spells shoe when the calculator is turned upside down. The number sentences should use multiple operations. The student needs to keep in mind order of operations and field properties as s/he creates the number sentences that will equal 3045.)
5. Ask students to find five other target numbers that, when displayed on the calculator and the calculator is turned upside down, spell a word. Each target number must have a number sentence that shows multiple operations as well as parentheses, exponents, decimals and/or fractions.
6. Ask students to provide a written explanation of his/her thinking and the procedures s/he used to create the number sentences for 3045. In the explanation the student should identify the most complex equation s/he created whether it be for 3045 or one of the other target numbers and tell what makes it so complex.
7. Evaluate each student’s work using the rubric and its guide to determine the performance level. In evaluating this work the teacher needs to be looking for the use and explanation of multiple operations, order of operations, inverse operations, field properties, exponents, parentheses, whole numbers, decimals, fractions and strategies.

Examples of Student Work not available

Resources

Time Requirements

- One class period

- Calculator
- Copies of the “Calculator Spelling” recording sheet
- Mathematics Rubric

ASSESSMENT (6B/6C).F

NAME _____ DATE _____

CALCULATOR SPELLING

Part I: If you display the number 3045 on your calculator and turn the display upside down, you will see the word ShOE. Use this target number and create 3 complex number sentences that compute to 3045. Each number sentence must show multiple operations, exponents, parentheses, decimals and/or fractions. Keep in mind the order of operations and field properties as you create your sentences.

Part II: Create five other target numbers and an equation to go with each one so that when displayed on the calculator and turned upside down, a word is spelled.

Part III: Explain in writing your thinking and the procedures you used to create each of your equations. In your writing, identify the equation you think is the most complex and tell what makes it so complex.

The Calculator Vocabulary
(teacher help sheet)

Number	Letter	Number	Letter
0	O	5	S
1	L	6	g
2	Z	7	L
3	E	8	B
4	h		

These words can be shown on the calculator by turning the display upside down.

be	gee	hobble	oil
bee	geese	hoe	ole
beg	gig	hog	sell
bell	giggle	hole	she
bible	hose	gill	shell
bile	glob	ill	sill
bill	globe	igloo	sigh
bless	gloss	is	silo
blesses	go	leg	size
bliss	goes	Leggs	sleigh
blob	goggle	less	so
bog	goose	lies	sod
boggle	gosh	lob	sole
boil	he	lobe	solo
boo	heel	log	zoo
ebb	hello	logo	eel
high	loose	egg	hisses