

Name: _____ Date: _____

Read and Build a Pictograph

GRADE 3

MATHEMATICS

B1.1

D1.3

When the numbers get big, one symbol has to stand for more than one thing. The pictograph below shows what four students earned this week, and its key says what one symbol is worth.

Points Earned This Week



Key: ☉ stands for 25

Source: our class balances

PART A: HOW MANY SYMBOLS?

1. At 25 points per symbol, Samuel's 250 points need _____ symbols.
2. At 25 points per symbol, Nandini's 175 points need _____ symbols.
3. At 25 points per symbol, Oscar's 300 points need _____ symbols.

PART B: TOTALS AND GAPS

4. What did the four students earn altogether this week? Write the total in hundreds, tens and ones.

SHOW YOUR WORK

Answer: _____

5. How many more points did Oscar earn than Wanjiru, and how many more symbols is that on the graph?

SHOW YOUR WORK

Answer: _____

6. If the key changed to 50 points per symbol, how many symbols would Oscar need?

SHOW YOUR WORK

Answer: _____

PART C: WHY A KEY?

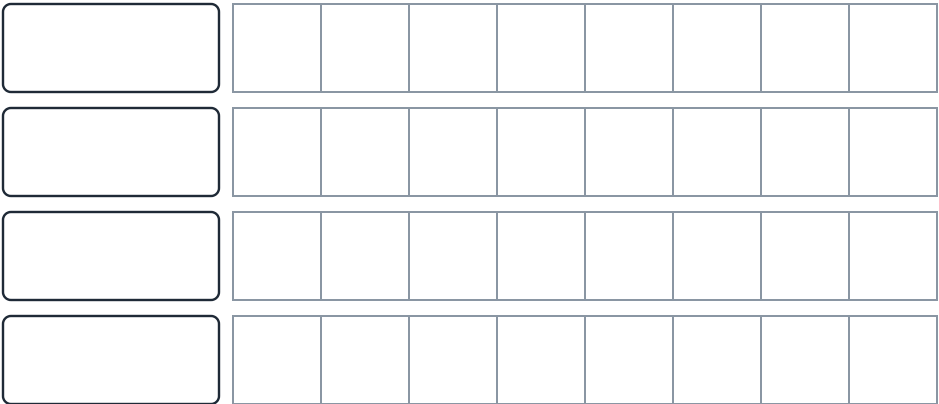
7. Why does a pictograph of this data need one symbol to stand for more than one point?
- (A) Because drawing 850 symbols would not fit on the page
 - (B) Because a pictograph is not allowed to use single points
 - (C) Because the numbers happen to be three digits long
8. With a key of 20 points per symbol, half a symbol stands for:
- (A) 10 points (B) 20 points (C) 40 points

PART D: BUILD IT

9. Redraw the same four students as a pictograph with a key of 50 points per symbol. Give it a title, write the new key, label each student's row, and add a line saying where the numbers came from. Then say what changed about the rows when the key doubled.

TITLE _____

KEY: ☉ = _____



WHERE THE NUMBERS CAME FROM _____

PART E: READ YOUR NEW GRAPH

10. On your new graph, Samuel's row has _____ symbols.
11. Nandini's row has _____ symbols, so it ends in half a symbol.
12. On your new graph, half a symbol stands for _____ points.
13. Oscar's and Wanjiru's rows together hold _____ symbols.
14. At 50 points per symbol, 1000 points would need _____ symbols.

Read and Build a Pictograph

ANSWER KEY

1. 10
2. 7
3. 12
4. 850 points, which is 8 hundreds, 5 tens and 0 ones.
5. 175 more points, which is 7 more symbols.
6. 6 symbols.
7. A) Because drawing 850 symbols would not fit on the page
8. A) 10 points
9. At 50 points per symbol Samuel needs 5 symbols, Nandini $3\frac{1}{2}$, Oscar 6 and Wanjiru $2\frac{1}{2}$, each row labelled, under a title with the new key written out and a source line. Every row is half as long as it was at 25 points per symbol, and halves are now needed where they were not before.
10. 5
11. $3\frac{1}{2}$
12. 25
13. $8\frac{1}{2}$
14. 20

TEACHER NOTES

The grade-level expectation: many-to-one correspondence with a key the data actually needs. Part B question 3 changes the key and asks students to re-scale, which is the idea that makes the key feel like a decision rather than a rule.