

Monster Math

Teacher Resource Packet

Grades 2 - 6



A Jordan School District Special Program
Sponsored by the Gifted & Talented Department



JORDAN
SCHOOL DISTRICT

What is Monster Math?

Monster Math is an integrated program combining skills in reading, thinking, communicating, computing, conceptualizing, and problem solving. Students work in groups to solve complex story problems. An emphasis is placed on explaining and documenting the reasoning and approaches to how the problem was solved.



Monster Math Problem Solving Steps and Strategies

Study: Take time to study the problem

- Read the problem and state in your own words what you need to find out
 - “I need to find out _____.”
 - “The main question I need to answer is _____.”
- Determine a label that is appropriate for the answer
 - trips _____ feet _____ pieces of candy _____
- Lightly cross out any unneeded data and/or circle important information
- List hidden sub-problems
 - Convert minutes to hours
- Determine a rough estimate of the answer
 - More than 5 trips, less than 10 feet, about 25 pieces of candy
 - Use the estimation later to check the reasoning of the answer

Explore: Spend time testing strategies

- Draw a picture of the problem
- Try it with objects
- Act it out
- Work it backwards
- Chart the data (make a chart, graph, etc.)
- Check for patterns
- Try it with smaller numbers
- Guess and check

Record: Record and label all steps

- Label numbers, drawings, graph, charts
- Perform the operations and explain
- Put the answer on the answer line with an appropriate label
- Be sure that all steps shown, lead to this answer (this is the part judges will see in the contest)

Check: Look back for completion

- Read the problem again
- Check again for hidden sub-problems
- Does the answer fit the question(s)?
- Does the answer make sense?
- Is all work labeled?
- Are all steps included?

Explain thinking and reasoning throughout to be sure your work makes sense.

Monster Math Performance Rubric

20 points

The answer is correct, written on the answer line and labeled. All steps in the explanation are shown, labeled and follow logically to the solution.

15 points

The answer is correct but...

Label or answer is missing on the answer line or
Labels are missing in the work shown or
A step in the process is not shown.

10 points

Correct answer but not enough work shown to support the answer/or

Incorrect answer, but work is shown, labeled and explained. *Ex: Computation error, incorrect labels, incorrect operation, etc.*

5 points

Correct answer, but little work is shown and no explanation is given to show how students arrived to their answer/or

Incorrect answer or no answer, limited work to suggest students read the problem and attempted to solve it.

Monster Math Achievement Scale (Total score for 2 problems)

| <u>Level</u> | <u>Points</u> |
|---------------|---------------|
| Einstein | 40 |
| Wizard | 30-35 |
| Champ | 20-25 |
| Star | 10-15 |
| Participation | 5 |



Second Grade Monster Math Problem Sample Responses/Points Earned

Billy has some pet birds and dogs. He has 8 pets altogether. If Billy's pets have a total of 24 legs, how many of his pets are birds? How many are dogs?

Answer: Billy has 4 dogs and 4 birds

4 dogs = 16 legs $4+4+4+4=16$
 4 birds = 8 legs $2+2+2+2=8$
 16 dog legs + 8 bird legs = 24 legs

20 points

The answer is correct, written on the answer line and labeled. All steps in the explanation are shown, labeled and follow logically to the solution.

Answer: Billy has 4 dogs and 4 birds



15 points

The answer is correct but...
 - Labels are missing in the work shown
 - Step(s) in the process not shown

Number of pets doesn't equal 8 or number of legs doesn't equal 24

*A **correct** answer on the answer line but not enough work shown to support the answer, would also earn 10 points.*

10 points

Incorrect answer, but work is shown, labeled and explained. Ex: computation error, wrong labels, incorrect operation, etc.



*A **correct** answer on the answer line with little/no work would also earn 5 points.*

5 points

Incorrect answer or no answer, limited work suggesting student(s) read problem & attempted to solve.

