

TMS 6-8 Rigor, Variety of Evidence Items, and Formatting

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The **rigor** in this approved test is demanding yet appropriate. The **variety of questions** used expect the student to demonstrate their understanding in multiple ways, and by asking him or her to pose appropriate questions allows the teacher to gauge each student's depth of knowledge in the standard(s) being assessed.

Strength of Electric and Magnetic Forces

MS-PS2-3 Ask questions about data to determine the factors that affect the strength of electric and magnetic forces. (Electric and magnetic forces can be attractive or repulsive and their sizes depend on the magnitudes of charges, currents or magnetic strengths involved and the distances between interacting objects.)

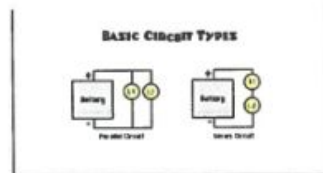
Total points (10)

1. Examine the figures below and determine which magnetic domain would have the strongest force. Explain your answer. (1 point for answer. 1 points for explanation)

2. Draw and label a second magnet to show attracting forces. (1 point for label. 1 point for drawing)



3. Ask a question about the factors that affect the strength of these electric circuits. (1 point)



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The **formatting** of the test is an example of how simplicity can be the most effective. Using a different font for the numbers and points value for each question can help the students to fully understand the task. If the formatting, structure, or images related to questions are unclear, the accuracy of students' understanding can be unintentionally skewed.

4. Use the data in the graph below to answer the following question. Which two planets would have the least amount of gravitational affect on one another? (1 points)

Gravity on Planets and Sun			
Body	g (g Earth)	Mass (kg)	Radius (m)
Sun	27.80	1.99×10^{30}	6.96×10^8
Mercury	0.37	3.30×10^{22}	2.43×10^6
Venus	0.88	4.87×10^{24}	6.05×10^6
Earth	1.00	5.97×10^{24}	6.37×10^6
Mars	0.37	6.42×10^{23}	3.39×10^6
Jupiter	2.53	1.90×10^{27}	6.99×10^7
Saturn	1.13	5.68×10^{26}	5.85×10^7
Uranus	1.00	4.59×10^{25}	2.33×10^7
Neptune	1.43	1.02×10^{26}	2.28×10^7
Pluto	0.04	1.45×10^{22}	1.15×10^6

5. Without changing the magnetic domains, what could you do to increase the attraction of two magnets? (1 points)
6. Choose all the statements that are true about static electricity. (1 point)
- a. Electric charges build up on an object.
 - b. Occurs when charges are separated and an excess of either positive or negative charge is left behind.
 - c. Electric currents travel through an object.
 - d. Electrons move from one object to another.
7. Name two objects that transfer static electricity and explain how the transfer occurs. (2 points one for the explanation and one for the possible objects.)