

## EMDI Screening Questions: Grade 8

Green = grade level prompts; Yellow = prior grade level prompts.

### 1\_G8. Compare

**Materials:** screening cards, symbols cards

For A and B, place a card in front of the student one at a time, along with the symbol cards, and say “Choose the comparison symbol that shows the relationship between these two expressions.” Once they placed the symbol ask, “Can you read this for me?” Follow up: “How do you know?”

A.  $-2^4$   $(-2)^4$

B.  $5^0$   $\frac{1}{5}$

For C and D place a card in front of the student one at a time and ask, “For what values of x (or m) would this remain true? When could it change?”

C.  $(x^3)^2 < x^9$

D.  $m^4 * m^3 > m^4 + m^3$

### Compare (1\_G7)

**Materials:** screening cards; symbol cards

Place a card in front of the student one at a time, along with the symbol cards, and say “Choose the comparison symbol that shows the relationship between these two numbers.” Once they placed the symbol ask, “Can you read this for me?” Follow up: “How do you know?”

A.  $-\frac{3}{4}$   $-\frac{1}{2}$

B.  $-2$   $-\frac{13}{6}$

C.  $-4.6$   $-4\frac{2}{3}$

### 2\_G8. Number identification

**Materials:** screening cards

Show the number line card and ask, “Where can these numbers be placed on the number line?” Follow up: “How did you figure out your answer?”



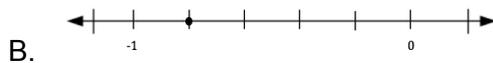
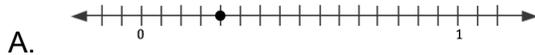
A.  $\sqrt{21}$

B.  $\sqrt[3]{64}$

C.  $4.31$

**Number Identification (2\_G6)****Materials:** screening cards

Show the number line card and ask, "What number can name the location shown by the point on the number line?" Follow up: "How did you figure out your answer?"

**3\_G8. Operations with Scientific Notation****Materials:** screening cards

Place a screening card in front of the student one at a time, and ask, "What is the answer to this problem?" If needed, follow up: "How did you figure out your answer?"

A.  $3.2 \times 10^6 + 4.8 \times 10^6$

B.  $\frac{8 \times 10^5}{2 \times 10^8}$

**Operations with Rational Numbers (2\_G7)****Materials:** screening cards  
available: two-color chips, number line

Place a screening card in front of the student one at a time, and ask, "What is the answer to this problem?" If needed, follow up: "How did you figure out your answer?" Have optional manipulatives available.

A.  $-3 + 7$

B.  $-5 - 1\frac{2}{3}$

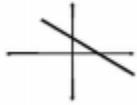
C.  $\frac{1}{2} - -1\frac{3}{4}$

### 4\_G8. Linear Functions

**Materials:** screening cards

Spread the 5 cards in the set out in front of the student and ask, "Which of these relationships show a linear function between 2 quantities?"

A.



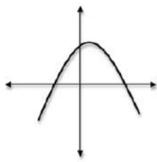
D.  $4x^2 = y$

B.  $y = 2x - 7$

E.

Input	Output
-2	7
-1	7
0	7
1	7

C.



### Proportional Relationships (5\_G7)

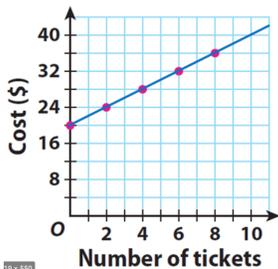
**Materials:** screening cards;  
available: paper and pencil

Spread the 6 cards in the set out in front of the student and ask, "Which of these relationships show a proportional relationship between 2 quantities?"

A.  $3x = y$

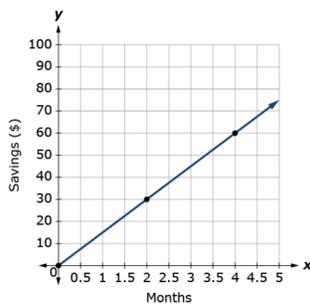
D.

B.



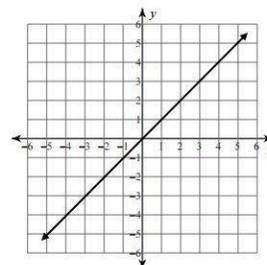
x	y
0	0
4	8
7	14

C.



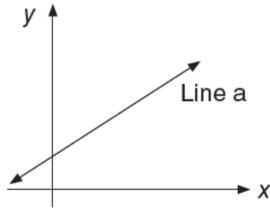
E.  $y = 2x + 5$

F.



**5\_G8. Graphs of Equations****Materials:** screening cards

Show the student the graph and ask “Which of these equations could represent line a? How do you know?” (Show students one equation at a time.)



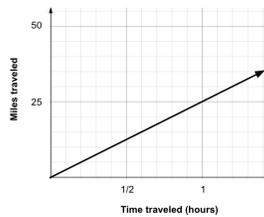
1.  $y = \frac{3}{4}x + 6$
2.  $y = -5x + 3$
3.  $y = 12x + 36$

**6\_G8. Comparing Unit Rates****Materials:** screening cards

Place the two cards from the first set in front of the student at the same time and say, “The graph shows the distance Car 1 was traveling at a certain speed and the equation shows the distance Car 2 was traveling at a certain speed. Which car was traveling at a greater speed? How do you know?” Follow up with the second set.

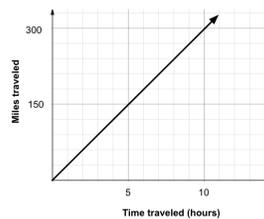
A. Car 1  
 $d = 30t$

A. Car 2



B. Car 1  
 $d = 50t$

B. Car 2

**Unit Rates (6\_G7)****Materials:** screening cards

Place the problem cards in front of the student one at a time, and say, “What is the answer to this problem?” Once, the student responds, ask, “How do you know?”

- A. Ana earns \$50 in 4 hours. How much does she earn per hour?
- B. Jayden earns \$35 in 3 hours. Does Ana or Jayden earn more?
- C. \$55 for 8 pounds of almonds, \$77 for 10 pounds of walnuts. Which costs less per pound?

**7\_G8. Solve linear equations****Materials:** screening cards, paper and pencil (optional)

Place the problem cards in front of the student one at a time and say, "Solve for x." Once the student responds, ask, "How do you know?"

- A.  $-32 = 7x + 3$   
B.  $4(3x + 2) = 5x - 6$

**Algebraic Expressions (7\_G7)****Materials:** screening cards

Place the pair of expression cards in front of the student one at a time, and say, "Are these expressions equivalent?" Follow up with, "How do you know?"

- A.  $3x + 5 + 7x$ ,  $10x + 5$   
B.  $4(x - 8)$ ,  $4x - 8$   
C.  $-5(x - 8) + 2$ ,  $-5x - 38$

**8\_G8. Systems of Linear Equations****Materials:** screening cards

Show students one system at a time and say, "Is there no solution, one solution, or infinitely many solutions? How do you know?"

- A.  $y = \frac{3}{5}x + 9$   
 $5y = 3x - 10$   
B.  $y = -7x + 16$   
 $y = \frac{3}{4}x + 8$   
C.  $5x - 7y = 3$   
 $-15x + 21y = -9$

**9\_G8 Word Problems****Materials:** screening cards

Place the word problem card in front of the student and say, "Read the problem on this card." Next spread the remaining cards in the set out in front of the student and ask, which of these equations (or system of equation) could represent the problem? How do you know?"

- A. Laura is four years older than her sister Sally. Laura's brother is five years younger than Sally. The sum of all of their ages is 83. Let  $s$  represent Sally's age.

$$(s + 4 - 5) = 83$$

$$(s + 4) + s + (s - 5) = 83$$

$$3(s + 4 - 5) = 83$$

$$3s - 1 = 83$$

- B. 300 tickets for a concert were sold. Some VIP tickets cost \$20, while the rest of the tickets cost \$15. The concert made \$1,430 in ticket sales. Let  $v$  represent the VIP tickets and  $r$  represent the regular price tickets.

System A

$$20r + 15v = 300$$

$$20v + 15r = 1,430$$

System B

$$r + v = 35$$

$$1,430 = 300(r + v)$$

System C

$$r + v = 300$$

$$20v + 15r = 1,430$$

**Word Problems (8\_G7)****Materials:** screening cards;  
available: paper and pencil

Place the word problem card in front of the student and say, "Read the problem on this card." Next spread the remaining cards in the set out in front of the student and ask,

- A. The length of a box is 3 more than twice its width. Let  $l$  represent the length of the box and  $w$  represent the width of the box. "Choose all of the equations that could represent the given situation." Follow up: How do you know?

$$l - 3 = 2w, l + 3 = 2w, l = 2w + 3, l - 3/2 = 2, \frac{1}{2} - 3 = w, l = 2(w + 3)$$

- B. A puppy weighed 14 ounces at birth. It gains 2 ounces each week. Let  $x$  represent the number of weeks. How much does it weigh after  $x$  weeks? "Which of these cards is an equation that could represent the given situation?" Follow up: How do you know?

$$y = 14x + 2, y = 2x + 14, x = 2y + 14, y - 4 = 2x, y - 14/2 = x, y/2 + 7 = x$$