

Mid-Point Math Check-ups 2009/10

Mid-point check-ups have been developed by teams of teachers from across the school division to assess **basic facts, computation and problem solving skills** at each grade level (one to nine) at the mid-point of the school year.

Purpose:

The purpose of a division-wide mid-point check-up is to provide teachers with a **teacher-made** common assessment that can be discussed at the school level between grades and within PLC teams that have a math focus. These check-ups will provide a snapshot of where students are at the half-way point in the year in the three areas mentioned above. The professional discussion about the results and the sharing of successes and concerns are the key elements to the check-up.

Assessing these basic skills mid-way through the year allows time for re-emphasizing skills that are lacking and will give teachers opportunities to discuss with colleagues strategies for re-teaching and for effective opportunities for drill and practice.

Division-wide results will **not** be compiled. The results of these check-ups are for the teachers who are administering them. They will hopefully provide a common tool to generate discussion and professional dialogue around planning for the remainder of the school year. These check-ups should be administered in **January**. Principals will be asked to report the wider findings of the results as part of their annual Learning Improvement Plan. There is an attached document which teachers may find useful to lead discussion at the school level or within PLC groups.

The check-up is divided into three components: basic facts, computation and problem solving skills. As part of the assessment, teachers will engage in an interview portion of the assessment with each student. These check-ups will likely take 2 sittings. No time limit has been placed on the time students are allowed to take to complete the assessment. Some questions may be seen as a “post-test” assessment, while other questions may represent a “pre-test” for skills to be taught in the 2nd half of the year.

Note that all of the **interview questions** do not have to be done by all of the students. Teachers may choose how many students do each interview question.

Questions about the assessment can be directed towards Brian, Ron or any of the math catalyst teachers.

Thanks to the following teachers who assisted in developing the midpoint assessments:
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**Grade 9 Mid-Point
Math Check-up
(Teacher Copy)**

Name: _____ Date: _____

Please note that the last page of this check-up will be done with your teacher in the form of an interview.

PART 1 - Basic Facts and Computation

For oral questions (A through D), state question, give a 3 second pause and state question again with a 3 second pause.

A. Multiplication Facts

1. _____ (8×4) **32**
2. _____ (6×7) **42**
3. _____ (9×3) **27**
4. _____ (7×7) **49**
5. _____ (12×4) **48**
6. _____ (6×11) **66**
7. _____ (9×8) **72**
8. _____ (25×6) **150**
9. _____ (30×40) **1200**

B. Division Facts

1. _____ $(72 \div 8)$ **9**
2. _____ $(60 \div 5)$ **12**
3. _____ $(32 \div 4)$ **8**
4. _____ $(63 \div 9)$ **7**
5. _____ $(28 \div 4)$ **7**
6. _____ $(88 \div 11)$ **8**
7. _____ $(54 \div 6)$ **9**
8. _____ $(240 \div 4)$ **60**
9. _____ $(120 \div 12)$ **10**

C. Fraction

- | | | |
|--|--------|--|
| 1. _____ $(\frac{4}{8} + \frac{3}{8})$ $\frac{7}{8}$ | | 5. _____ $(\frac{5}{7} - \frac{2}{7})$ $\frac{3}{7}$ |
| 2. _____ $(\frac{4}{5} - \frac{2}{5})$ $\frac{2}{5}$ | (N9.2) | 6. _____ $(\frac{3}{5} + \frac{4}{5})$ $\frac{7}{5}$ or $1 \frac{2}{5}$ |
| 3. _____ $(2 + \frac{1}{3})$ $2 \frac{1}{3}$ | | 7. _____ $(\frac{5}{8} - \frac{3}{8})$ $\frac{2}{8}$ |
| 4. _____ $(\frac{7}{9} - \frac{3}{9})$ $\frac{4}{9}$ | | 8. _____ $(\frac{2}{6} + \frac{4}{6})$ $\frac{6}{6}$ or 1 |

D. Squares and Roots

1. _____ (9^2) 81

2. _____ (7^2) 49

3. _____ (12^2) 144

4. _____ $\sqrt{16}$ 4

5. _____ $\sqrt{36}$ 6

6. _____ $\sqrt{121}$ 11

7. _____ $\sqrt{100}$ 10

8. _____ $\sqrt{64}$ 8

(N9.2)

E. Computations (N9.1/9.2)

$$1. \begin{array}{r} 675 \\ + 298 \\ \hline 973 \end{array}$$

$$2. \begin{array}{r} 345 \\ - 298 \\ \hline 47 \end{array}$$

$$3. \begin{array}{r} 23 \\ \times 75 \\ \hline 1725 \end{array}$$

$$4. 23 \overline{)456} \\ 19 \text{ r}19$$

$$5. -8 + 13 \\ 5$$

$$6. 13 - (-9) \\ 22$$

$$7. (-12)(-37) \\ 444$$

$$8. \frac{3(37-25)}{-2+6} \\ 9$$

$$9. 12.3 - 2.8 \\ 9.5$$

$$10. 1.05(1.50 + 2.75) \\ 4.4625$$

$$11. 2.5 \overline{)16} \\ 6.4$$

$$12. (-1.2)^2 - (3.1 - 2.9) \\ 1.24$$

F. Number Problems

1. Completely factor 48.

1, 2, 3, 4, 6, 8, 12, 16, 24, 48

2. Write the following fractions from smallest to largest: (N9.2)

$$\frac{3}{4}, \frac{4}{5}, \frac{5}{8}, \frac{7}{10}$$

5/8, 7/10, 3/4, 4/5

3. Estimate the value of $\sqrt{28}$ and explain how you came up with your estimate.

Estimate-

Explanation- See if students recognize that $\sqrt{25}$ is 5 and the $\sqrt{36}$ is 6.

(N9.3)

4. Which is larger: 15% of 70 or 12% of 90?

12% of 90 (10.8)

PART 2 – Problem Solving (P9.2)

1. The cost to go to Calaway Park is \$19.95 for adults and \$14.95 for children. How much would it cost for 2 adults and 3 children to go to Calaway Park?
 - a) Estimate
 - b) Calculate.

a) adult tickets \$20 and children tickets are \$15 $(20 \times 2) + (15 \times 3) = \85

b) $(19.95 \times 2) + (14.95 \times 3) = \84.75

What strategy did you use to solve the problem?

2. Matthew's bus leaves at 11:25 for Meadow Lake. He wants to be at the bus terminal 20 minutes early. The cab ride to the terminal is about 25 minutes. Matthew wants to spend 35 minutes shopping on his way to the terminal. When should he leave his hotel room?

Answer is 10:05 am:

10:05 + 35 minutes shopping (10:40)

10:40 + 25 minutes cab ride (11:05)

11:05 + 20 minutes early (11:25)

What strategy did you use to solve the problem?

3. Jason had an average of 56% on his first 7 exams. What would he have to make on his eighth exam to obtain an average of 60% on 8 exams?

Let x = the mark on the eighth exam.

$$56\% = .56$$

$$(.56 * 7 + x)/8 = .60$$

$$3.92 + x = .60 * 8$$

$$3.92 + x = 4.80$$

$$x = 4.80 - 3.92$$

$$x = .88 = \mathbf{88\%}$$

What strategy did you use to solve the problem?

4. A rectangle has the dimensions 9 cm by 16 cm. What are the dimensions of a square with the same area ?

Rectangle: $9 \times 16 = 144$ (area)

Square: $\sqrt{144} = \mathbf{12 \text{ cm}}$

What strategy did you use to solve the problem?

5. A bike is travelling at 35 km/h. A car is travelling at 80 km/h and begins 180 km behind the bike.

How long will it take the car to catch up to the bike?

4 hours

$$35y + 180 = 80y$$

Many students may develop an hour-by-hour chart

What strategy did you use to solve the problem ?

PART 3 – Interview Questions

1. Simplify the following expressions involving fractions. Explain your strategies as you do them

a. $\frac{4}{5} + \frac{2}{3}$

b. $\frac{5}{7} - \frac{2}{9}$

c. $\frac{11}{12} \cdot \frac{6}{7}$

d. $\frac{7}{16} \div \frac{14}{15}$

e. $\left(\frac{2}{3} - \frac{1}{4}\right) \div \left(\frac{3}{4} + \frac{1}{3}\right)$

2. Simplify the following expressions involving exponents. Explain your strategies as you do them

a. $4^3 + 4^2$

b. $2^6 - 2^3$

c. $5^2 \cdot 5^5$

d. $9^8 \div 9^6$

e. $\frac{3^7 \cdot 3^2}{3^3}$

3. Ron got 75% on his Math exam. If the exam has 24 questions worth 1 mark each, how many questions did Ron get correct?

4. Terry made a mistake with her homework problem:

$$12 \div 4 + 6 \cdot (-2)$$

$$= 3 + 6 \cdot (-2)$$

$$= 9 \cdot (-2)$$

$$= -18$$

Explain the mistake that Terry made and how she could fix it.

Name: _____

Student Response Sheet to Interview Questions

Simplify expressions involving fractions and explain your strategies as you do them (1)

a. $\frac{4}{5} + \frac{2}{3}$

b. $\frac{5}{7} - \frac{2}{9}$

c. $\frac{11}{12} \cdot \frac{6}{7}$

d. $\frac{7}{16} \div \frac{14}{15}$

e. $\left(\frac{2}{3} - \frac{1}{4}\right) \div \left(\frac{3}{4} + \frac{1}{3}\right)$

Name: _____

Student Response Sheet to Interview Questions

Simplify expressions involving exponents and explain your strategies as you do them (2)

a. $4^3 + 4^2$ _____

b. $2^6 - 2^3$ _____

c. $5^2 \cdot 5^5$ _____

d. $9^8 \div 9^6$ _____

e. $\frac{3^7 \cdot 3^2}{3^3}$ _____

Ron got 75% on this Math exam. If the exam has 24 questions worth 1 mark each, how many questions did he get right? (3)

Terry made a mistake with her homework problem:

$$12 \div 4 + 6 \cdot (-2)$$

$$= 3 + 6 \cdot (-2)$$

$$= 9 \cdot (-2)$$

$$= -18$$

Explain the mistake and how she could fix it (4)