



G6-G7
Basic

G7-G8
Advanced

Helping With Math

GRADES

Arithmetic Skill: Integers

Suitable for students
aged 10-13



This pack is suitable for learners aged 10-13 years old or 6th to 8th graders.

The content covers fact files and relevant basic and advanced activities of integers topics that aim to develop and strengthen the learners' arithmetic skills.

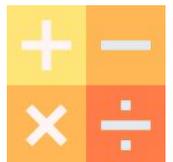
Every November 2nd is the Day of the Dead



Día de los Muertos, or Day of the Dead, is a celebration of life and death. While the holiday originated in Mexico, it is celebrated all over Latin America with colorful calaveras (skulls) and calacas (skeletons).

Source: <https://www.nationalgeographic.com/travel/article/top-ten-day-of-dead-mexico>

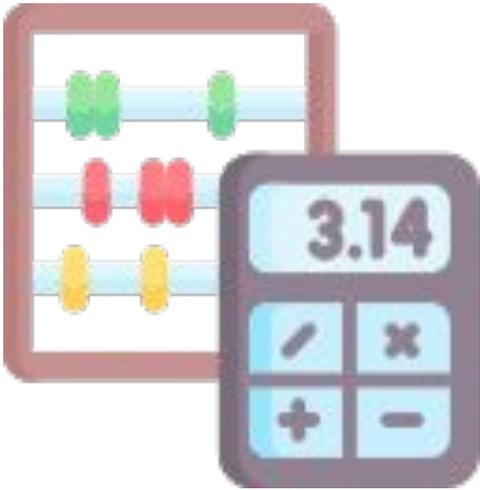
Arithmetic/Calculation Skill



We use arithmetic daily. We add, subtract, multiply, or divide when we count our bills and coins, calculate the distance of two places from one another, figure out how much pounds of meat to buy, etc.



CONCEPTS



- **Arithmetic skill** is concerned with numerical calculations, such as addition, subtraction, multiplication, and division.
- It is one of the basic skills in mathematics that children must learn.

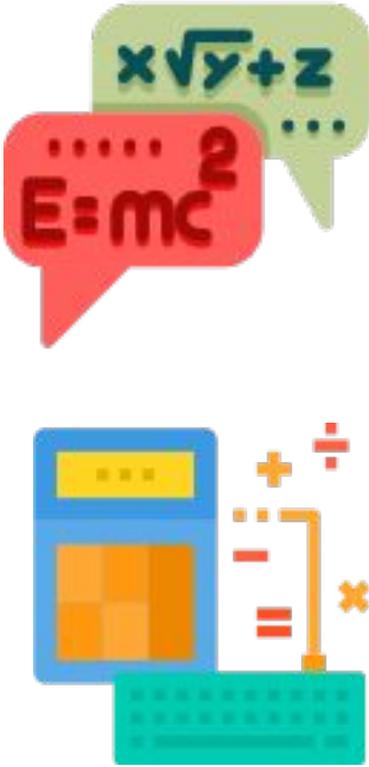
All About Arithmetic and Learners

- ★ Kindergarten start to add by counting numbers using the fingers on one hand — 1, 2, 3, 4, 5 — and starting with 6 on the second hand.
- ★ 1st to 2nd graders begin to count to 100 by ones, twos, fives, and tens. They can also do basic addition and subtraction up to 20.
- ★ 3rd graders shift from using hands-on methods to using paper and pencil to work out math problems. They can now do addition and subtraction with regrouping (also known as borrowing). They can now start do multiplication and division, by relating it to fact families (collections of related math facts, like $2 \times 4 = 8$ and $4 \times 2 = 8$)



CONCEPTS

All About Arithmetic and Learners



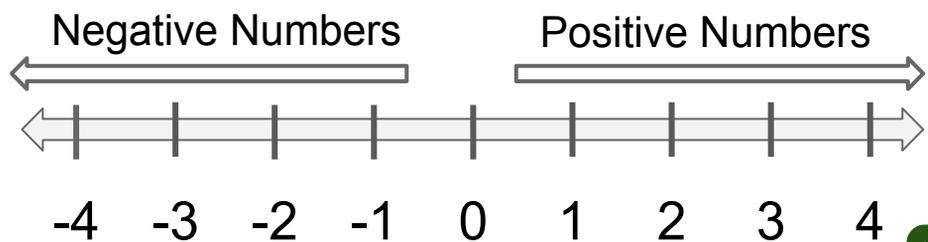
- ★ 4th to 5th graders explore the two- and three-digit multiplication (like 360×21). They can now solve complete long division, with or without remainders.
- ★ Middle schoolers learn basic algebra with one unknown number (like $3 + x = 8$). They also show enthusiasm in working with fractions, percentages, and proportions
- ★ High schoolers apply numbers in real-life situations (like calculating a sale price or comparing student loans)

INTEGERS

INTEGERS



It is a whole number that can be positive, negative, or zero. Since it is whole numbers, integers cannot have decimal places.



OPERATIONS ON INTEGERS

Addition with like signs may involve both positive (+) signs or negative (-) signs

To add integers with similar signs, simply add or compute for the sum of the given. Do not forget to include the sign used.

EXAMPLE

$$\begin{array}{l} + \\ + \\ + \end{array} 63 + 92 \\ = 155$$

$$\begin{array}{l} - \\ - \\ - \end{array} 47 + 23 \\ = 70$$

$$\begin{array}{l} 82 + 16 \\ = 98 \end{array}$$

$$\begin{array}{l} -123 + (-62) \\ = -185 \end{array}$$

To add integers with different signs, get the difference between their absolute values and use the sign of the integer with higher value in the sum.

EXAMPLES:

$$-29 + 35 = 6$$

$$82 + -51 = 31$$

$$-75 + 11 = -64$$



OPERATIONS ON INTEGERS

Subtraction with unlike signs may be in the following given form: $(+) - (-)$ or $(-) - (+)$.



SUBTRACTING INTEGERS WITH UNLIKE SIGNS

To subtract integers, change the sign on the integer that is to be subtracted. Subtract the smaller absolute value from the larger absolute value. Remember: KCC! --- Keep, Change, Change.

1. **K** Keep the sign of the minuend
2. **C** Change the operation symbol (minus sign to plus sign), and
3. **C** Change the sign of the subtrahend.

INTEGER SIGN	OPERATION	ANSWER SIGN
$(+) - (-)$	Add	(+)
$(-) - (+)$	Add	(-)

EXAMPLES:

$$48 - (-69) = 117$$

$$-82 - 37 = -119$$

$$96 - (-25) - 13 = 108$$

To **subtract integers with similar signs**, simply subtract or compute for the difference of the given. Do not forget to include the sign used.



OPERATIONS ON INTEGERS

- To multiply integers with unlike signs, simply get the product of the factors and put negative sign on it.
- The multiplication of a positive integer and a negative integer (and vice versa) is always negative.
- In other words, when both numbers have different signs, the result is always negative.

Visual Representation

INTEGER SIGN	OPERATION	ANSWER SIGN
(+) x (-)	Multiply	(-)
(-) x (+)	Multiply	(-)
(-) x (-)	Multiply	(+)
(+) x (+)	Multiply	(+)

EXAMPLES

1.) $67 \times -10 = -670$ 2.) $-38 \times 91 = -3,458$ 3.) $58 \times (-9) \times 12 = -6,264$

Try these:

$$\begin{array}{r} \quad 1,398 \\ x \\ \hline \quad -384 \end{array}$$

$$\begin{array}{r} \quad -7,281 \\ x \\ \hline \quad 18 \end{array}$$

$$\begin{array}{r} \quad 2,498 \\ x \\ \hline \quad -123 \end{array}$$



OPERATIONS ON INTEGERS

- To divide integers with like signs, simply get the quotient of the given division sentence and put positive sign on it.
- The division of both positive integer and both negative integer is always positive.
- In other words, when both numbers have same signs, the result is always positive.



Visual Representation

INTEGER SIGN	OPERATION	ANSWER SIGN
$(+) \div (+)$	Divide	(+)
$(-) \div (-)$	Divide	(+)

Visual Representation

INTEGER SIGN	OPERATION	ANSWER SIGN
$(+) \div (-)$	Divide	(-)
$(-) \div (+)$	Divide	(-)

- To divide integers with unlike signs, simply get the quotient of the division sentence and put negative sign on it.
- The division of a positive integer and a negative integer (and vice versa) is always negative.
- In other words, when both numbers have unlike signs, the result is always negative.



TABLE OF ACTIVITIES

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DIA DE MUERTOS

G6-G7
Basic

Come and celebrate with the people of Mexico! Dia De Muertos is one of their colorful holidays! Do that by solving the following integers below.

1. $-168 - (-474) =$

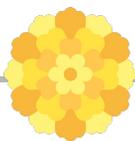
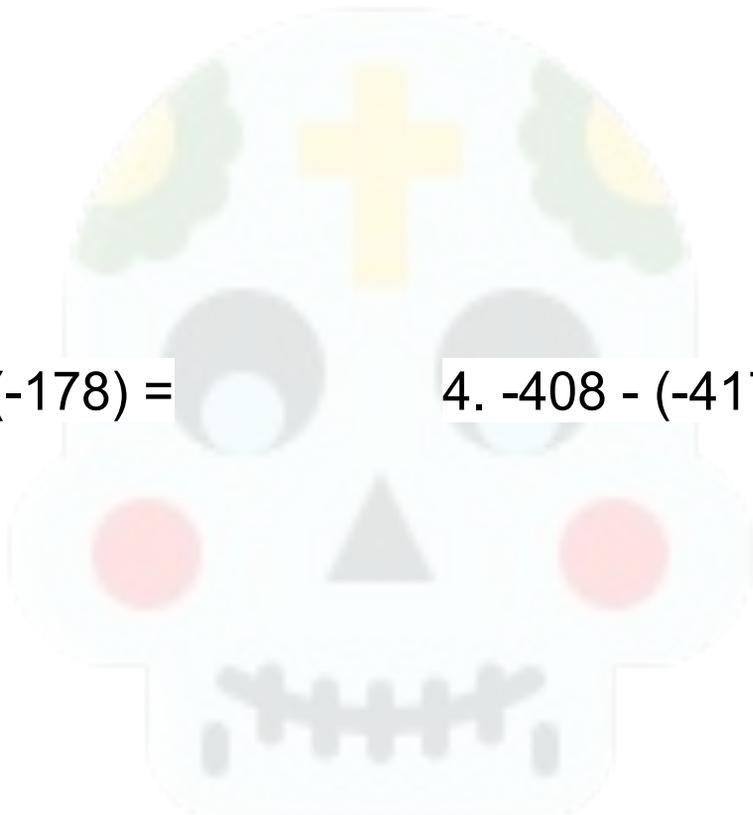
2. $-619 - (-127) =$

3. $-748 - (-178) =$

4. $-408 - (-417) =$

5. $-894 - (-568) =$

6. $-21 - (-258) =$



CALAVERA AND DAHLIA

G6-G7
Basic

Calavera is the Spanish word for skull. This is one of the vital symbols of Day of the Dead. Make sure that these calaveras would be able to enjoy the fragrance of dahlia by solving the following.

1. A number is located 43 units away from the right of -2 . Is this number greater than 40? Prove your answer.



2. Compare the unit distance of -62 and 28 to the unit distance of -90 and 63 .



3. Compare the unit distance of -293 and 130 to the units distance of -450 and 194 .



4. How will you describe the characteristics of two numbers that are 50 units away from the left and right of 0?



REMEMBERING THE DEAD

G6-G7
Basic

One of the reasons of celebrating the Day of the Dead is to remember the loved one who already passed away. Show them what you've got by supplying the missing value.



1. $13 + \underline{\hspace{2cm}} + 39 = 46$

2. $-19 + 48 + \underline{\hspace{2cm}} = -41$

3. $15 + -50 + -75 = \underline{\hspace{2cm}}$

4. $\underline{\hspace{2cm}} + -72 + 33 = 10$

5. $50 + \underline{\hspace{2cm}} + -115 = 25$

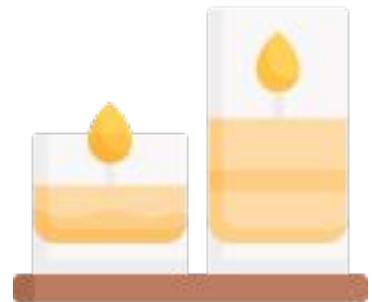
6. $-100 + 40 + 40 = \underline{\hspace{2cm}}$

7. $\underline{\hspace{2cm}} + -33 + -101 = -35$

8. $-194 + \underline{\hspace{2cm}} + 12 = -225$

9. $-87 + 109 + \underline{\hspace{2cm}} = 8$

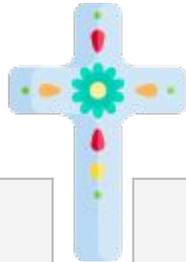
10. $77 + \underline{\hspace{2cm}} + 190 = 224$



EVERY NOVEMBER 2ND

G6-G7
Basic

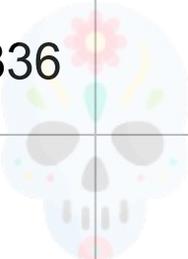
As a tradition, Dia De Muertos or the Day of the Dead is celebrated every 2nd day of November. Offer a prayer to the dead by calculating the sum and difference of the given integers.



+	62	15
16		
51		

+	156	83
34		
48		



-	-773	-523
563	-1336	
536		

-	393	814
-14	407	
-655		



A CELEBRATION FOR THE DEAD

G6-G7
Basic

Celebrate the Day of the Dead with music and colors! To do that, solve the given problems below. Make sure to get everything done!



1. I am an integer whose addends are -48 and -13 . What am I?



2. One of my addends is -21 . Our sum is -100 . What is my other addend?

2. Assume that a stepback represents negative integers, what would be the difference if you subtract -850 and -332 ?

2. Derek noticed that yesterday's temperature was 24 degree celsius. He said that the temperature two weeks ago was -8 degrees cooler than yesterday's record. What was the temperature two weeks ago?



A CELEBRATION OF MUSIC

G7-G8
Advanced

Join the Mexicans to celebrate the Day of the Dead with music and laughter. How about verifying if these statements are true?

_____ 1. One thousand eight hundred fifty-three multiplied by negative four hundred eighty-eight is equal to positive nine hundred four thousand two-hundred sixty-four.



_____ 2. Negative three hundred seven multiplied by one hundred sixty-two is equal to negative four hundred ninety-seven thousand two hundred thirty-four.



_____ 3. Two thousand five hundred twenty-nine multiplied by negative sixty-seven is equal to negative one hundred sixty-nine thousand four hundred forty-three.



TACO, LIME, AND MORE

G7-G8
Advanced

Complete the celebration of the Day of the Dead with delicious food! Get a chance to get free tacos and other food by answering these integers with unlike signs.



$$1. -731 \times \underline{\hspace{2cm}} = -16,082$$

$$2. \underline{\hspace{2cm}} \times -27 = -16,146$$

$$3. -902 \times 81 = \underline{\hspace{2cm}}$$

$$4. 861 \times -41 = \underline{\hspace{2cm}}$$

$$5. \underline{\hspace{2cm}} \times 61 = -55,937$$

$$6. 911 \times \underline{\hspace{2cm}} = -88,367$$

$$7. -643 \times 47 = \underline{\hspace{2cm}}$$



Additional question:

1. What factors will result to -45?
2. What are the two numbers that will yield a product of -300?



PRAYER FOR THE DEAD

G7-G8
Advanced

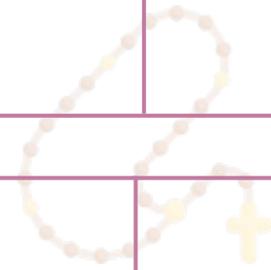
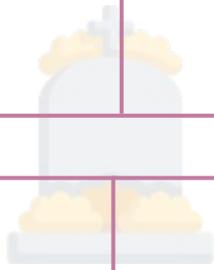
This Day of the Dead, offer a prayer to those who already passed away. Also, honor their lives as you get the quotient of these integers.

\div	-9,296	-1,624
56		

\div	-1,326	-9,112
34		

\div	8,550	8,010
-90		

\div	7,182	4,200
-42		



\div		

\div		



PARADE OF CALAVERA

G7-G8
Advanced

Dance with these people with calavera makeup by solving the following problems about integers.

1. My quotient is -92 . What is my dividend and divisor?



2. I will result to -88 . What is my dividend and divisor?



3. I will result to -93 . What is my dividend and divisor?



4. My quotient is -102 . What is my dividend and divisor?



$-8,004$

$-9,384$

-77

-38

87

$3,534$

$6,776$

92



COLORFUL SKULLS

G7-G8
Advanced

Get a free Day of the Dead: Skull Makeup makeover by answering the following math items.

$$(350 + 50)$$

$$\div$$

$$(15 + 25)$$



$$(118 + 47)$$

$$\div$$

$$(17 + 8)$$

$$(236 + 18)$$

$$\div$$

$$(150 - 23)$$



$$(58 \times 14)$$

$$\div$$

$$(98 - 84)$$

$$(87 \times 25)$$

$$\div$$

$$(120 + 25)$$



$$(98 \times 16)$$

$$\div$$

$$(7 \times 8)$$



ANSWER GUIDE

Activity 1

1. 306 2. -492 3. -570 4. 9 5. -326 6. 237

Activity 2

1. Yes, the number is greater than 40 because that number is 41.
2. The first has a unit distance of 120 while the second has 153.
3. The first has a unit distance of 423 while the second has 644.
4. They both have the same number of unit distance which is 50.

Activity 3

1. 0 2. -70 3. -110 4. 49 5. 90
6. -20 7. 99 8. -43 9. -14 10. -43

Activity 4

1. 78 2. 31 3. 113 4. 66 5. 190
6. 117 7. 204 8. 131 9. -1336 10. -1086
11. -1309 12. -1059 13. 407 14. 1048 15. 828
16. 1469

Activity 5

1. -61 2. -79 3. -417 4. 32 degrees celsius



ANSWER GUIDE

Activity 6

1. False, the answer must be -904264
2. False, the correct answer is -49734
3. TRUE

Activity 7

1. 22
 2. 598
 3. -73062
 4. -35301
 5. -917
 6. -97
 7. -30221
1. -9 and 5, -5 and 9, are some of the possible answers.
 2. -10 and 30, -30 and 10 are some of the possible answers.

Activity 8

1. -166
2. -29
3. -39
4. 268
5. -95
6. -89
7. -171
8. -100

Activity 9

1. -8,004, 87
2. 6,776, -77
3. 3,534, -38
4. -9,384, 92

Activity 10

1. 10
2. 11
3. 2
4. 58
5. 15
6. 28



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