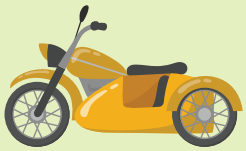
Learning Outcome:
Deduce that an expression of any type can be obtained by combining like terms in the given expressions using addition or subtraction.
6.EE.A.2

1 If the weight of one apple is represented by a and weight of one banana by b, express the total weight of fruits as an algebraic expression.


2 The cost of a bike is $b and that of a car is $c. Express the total cost of 3 cars and 4 bikes as an algebraic expression.


$b


$c

3 Add the like terms 3a + 2c + 2a + 4c.

Name the type of algebraic expression.

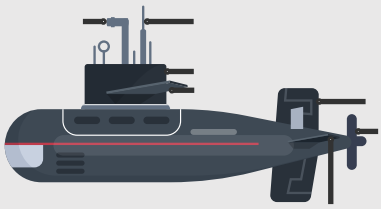
4 A person could read x pages on Monday. On Tuesday, he read twice the number of pages that he read on Monday. Find out the total number of pages that he has read and identify the algebraic expression.

Monday	Tuesday	Total number of pages	Type of the expression
x pages	2x pages		

Learning Outcome:
Deduce that an expression of any type can be obtained by combining like terms in the given expressions using addition or subtraction.

6.EE.A.2

1 A submarine used in early expeditions had 2 fuel tanks for backup. Their capacities are given below.



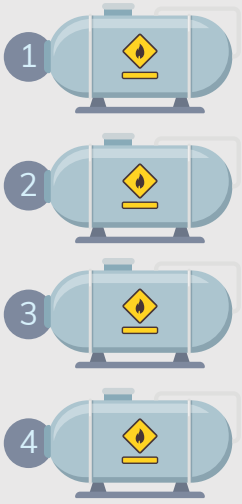
a. The 1st tank had 'f' liters of fuel.

b. The 2nd tank had twice as much fuel as the 1st tank.

c. The 3rd tank had 4 times as much fuel as the 1st tank.

d. The 4th tank had 2.5 times as much fuel as the 1st tank.

What is the capacity of each tank in terms of 'f'?



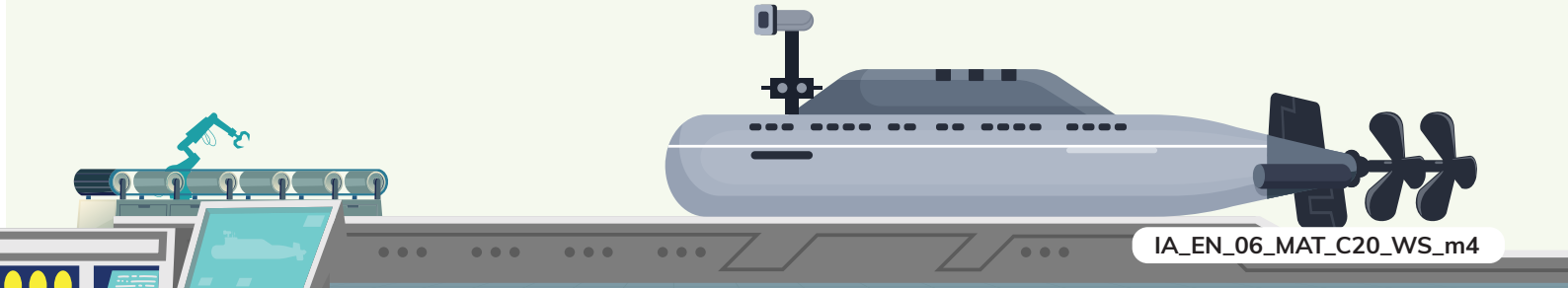
Tank	Capacity of fuel (in liters)
1st tank	f liters
2nd tank	____ liters
3rd tank	____ liters
4th tank	____ liters

Express the total capacity of fuel in all the 4 tanks, as an algebraic expression:

2 Represent the total charge of the batteries in the form of an algebraic expression, if the charge of each battery is represented by c.

Control Room

Engine Room



Learning Outcome:
Add and multiply like and unlike terms in an algebraic expression. Classify algebraic expressions as monomials, binomials, trinomials, and polynomials. Deduce that an expression of any type can be obtained by combining like terms in the given expressions using addition or subtraction (6.EE.A.2.b)

To improve communication, we need to install transmission devices in the submarine. We have three such devices.

Note: Choose the variables and cost from the given cost range per device.

Communication devices	Choose a variable representing the number of devices	Cost range per device (in $)	Choose the cost for each device
Radio antennas		Between $500 and $700	
Radars		Between $1000 and $1200	
SONARs		Between $800 and $1000	

1 Express the total cost of communication devices installed in the submarine as an expression.

2 When you explore deep in the ocean you need twice the radio antennas, half the radars and three times the SONARs. Express the total cost of this situation as expression.
Note: The cost per device will remain the same as in the 1st case.

3 Exploring team wants to know the total cost needed in both the situations. Express the total cost of both the situations as an expression.