Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**CFS for top quality work**

* + Problem is annotated
  + Tape diagram is **drawn and labeled**
  + Equations is written
  + Tape diagram/equation is kept **balanced**
  + Final answer is ***substituted*** in to check

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

UNIT 4 LESSON 2

**AIM**: SWBAT solve algebraic situations in context using a tape diagram to model

In my own words this means I will be able to…

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**THINK ABOUT IT!**

Liza is trying to solve the problem below by drawing a model.

Step A: Use Liza’s model to solve the problem

Step B: Represent Liza’s model with an equation.

Step C: Based on the work you did in Step A, how would you solve the equation for the unknown variable?

*“Mark is a certain age. Tori is twice Mark’s age plus 3 years. Their combined age is 39. How old is Tori?”*

*Liza’s Model:*

Mark’s Age

**n**

Combined Age = 39

3

**n**

**n**

Tori’s Age

Key Point

|  |
| --- |
| An \_\_\_\_\_\_\_\_\_\_\_\_\_\_ approach can be used to solve algebraic \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Interaction with New Material**

Ex. 1) Marcus earns three times what Tim does. Jon earns twice what Tim does plus an additional $45. Altogether, the three friends earn 345 dollars over the weekend. How much did each person earn?

**CFS for top quality work**

* + Problem is annotated
  + Tape diagram is **drawn and labeled**
  + Equations is written
  + Tape diagram/equation is kept **balanced**
  + Final answer is ***substituted*** in to check

**PARTNER PRACTICE**

**CFS for top quality work**

* + Problem is annotated
  + Tape diagram is **drawn and labeled**
  + Equations is written
  + Tape diagram/equation is kept **balanced**
  + Final answer is ***substituted*** in to check

|  |
| --- |
| *Bachelor Level* |

1. Kym is three times Brandon’s age plus a 1. Their combined age is 49. How old is Brandon?
2. Samantha solved the following problem: *Marion and Aaron are earning money to buy a new Xbox. Marion earns twice as much as Aaron plus an additional $33 dollars. Altogether, they have earned $258. How much did Aaron earn?*

She wrote the following equation: 2x + 33 = 258 and got x = 112.5

What mistake did she make? Prove your answer using words and a tape diagram.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |
| --- |
| *Master Level* |

1. 331 students went on a field trip. Six buses were filled and 7 students traveled in cars. Which of the following statements below is true? Choose all that apply.

A) More students traveled in cars than on each bus

B) More students traveled on each bus than in cars

C) Each bus carried about 55 students

D) Each bus carried exactly 54 students

E) Each bus carried about 41 students

**INDEPENDENT PRACTICE**

**CFS for top quality work**

* + Problem is annotated
  + Tape diagram is **drawn and labeled**
  + Equations is written
  + Tape diagram/equation is kept **balanced**
  + Final answer is ***substituted*** in to check

|  |
| --- |
| *Bachelor Level* |

1. Tyler has to choose which hotel he wants to stay at on his upcoming vacation. He can stay at Modest Inn or he can stay at Massive Motel which has three times as many rooms as Modest Inn plus 5 additional rooms. How many rooms does Modest Inn have if they have 85 rooms between the two of them?
2. Jaci has two different bank accounts that she saves money in to pay for college. Account A has four times as much money as Account B plus an additional $100. She has $1,100 total in both accounts.

Lauren says that Jaci has $250 in Account B because 1,100 – 100 = 1000, and 1000 ÷ 4 = 250. How could Lauren fix her mistake? Use a tape diagram and an equation to support your answer.

A) Add $100 to $250

B) Divide $1100 by 4 first and then subtract $100

C) Divide $1000 by 5 instead of by 4

D) Divide $1100 by 5 and then subtract $100

|  |
| --- |
| *Master Level* |

1. Sumalee won 40 super bouncy balls playing horseshoes at her school's game night. Later, she gave two to each of her friends. She only has 8 remaining. How many friends does she have?
2. You bought a magazine for $5 and four erasers. You spent a total of $25. Read each statement below and determine which statement is true and which statement is false.

|  |  |  |
| --- | --- | --- |
|  | True | False |
| Each eraser costs $5 |  |  |
| Each eraser costs $6.25 |  |  |
| Six erasers and two magazines would cost $40 |  |  |
| Twice as many erasers, without the magazine, would cost $40 |  |  |

1. Mari is twice as old as Harry. Jacob is three times older than Harry plus two years. Their combined age is 50. How old is each person?
2. Elm City, Amistad, and Bridgeport middle schools are going on a field trip to the state capital. Amistad takes twice as many busses as Elm City and Bridgeport take twice as many busses as Elm City plus they take an additional five scholars. How many kids are on each bus if the three busses take 280 scholars on the field lesson?

|  |
| --- |
| *PhD Level* |

1. The sum of three consecutive numbers is 72. What are the smallest of these numbers?
2. The sum of three consecutive even numbers is 48. What are the smallest of these numbers?
3. How old am I if 400 reduced by 2 times my age is 244?

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**CFS for top quality work**

* + Problem is annotated
  + Tape diagram is **drawn and labeled**
  + Equations is written
  + Tape diagram/equation is kept **balanced**
  + Final answer is ***substituted*** in to check

**Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**EXIT TICKET**

|  |  |  |  |
| --- | --- | --- | --- |
| Self-assessment | I mastered the learning objective today. | I am almost there. | Need more practice and feedback. |
| Teacher feedback | You mastered the learning objective today. | You are almost there. | You need more practice and feedback. |

1. Timmy and Tommy are each earning money to go on a trip for school. In one weekend, Timmy earns a certain amount and tommy earns twice what Timmy earned plus $24. Altogether, they earned $174.

Step A: Draw a model to represent this situation

Step B: Solve the model arithmetically and determine how much each person made

Step C: Write an equation that represents your model?

Step D: Explain how you could solve the equation using the steps you took in Step B.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_