Activity: Monster Battle 2

Purpose:

The purpose of this assignment is to further explore C++ classes and class syntax in combination with arrays and pass-by-reference functions.

Task

Download the starter code and complete the following challenges.

1. **IMPORTANT**: Read these instructions completely with your partner before starting to code.
2. Complete the **Coin** class in the game_classes.hpp source file.
    a. Use the **Dice** class to implement the Coin.
    b. Give Coin and private variable with type Dice.
    c. In the **flip** method, use your instance of the Dice class to simulate a coin flip. This could be done in many ways. Just make sure the flip method returns true 50% of the time on average and similarly for false.
3. Extend the Monster class by doing the following:
    a. Add a **subractHealth** method. This method should take an input int value and subtract the Monster's health by the given value. Do not allow the health to go lower than 0. If the added amount should go below 0, set it to 0.
    b. Add an **addHealth** method. This method should take an input int value and add to the Monster's health by the given value.
    c. Add an **isKOed** method (KO stands for Knocked Out). Have this method return true if the Monster's health is above 0. Return false if the Monster's health is 0.
    d. Add an **incrementAttackMax** method. This method will add 1 the Monster's max attack. This will be done by adding 1 to the attackDice's number of sides. Feel free to add a method to Dice to make this easier if needed.
4. Complete the **battle** function in main.
    a. **Note**: In this simulation, the Monsters are all part of an array. The player's Monster is at position 0 of the array. The rest of the monsters will battle the player.
    b. Have the battle function complete a battle with the player and the rival monster.
    c. At the start of the battle, use a coin flip (using an instance of your coin class) to determine who goes first.
    d. Next, in a loop, have the Monsters take turns attacking and dealing damage to each other. Continue looping until one of the monster's is KO'ed
    e. Output some text describing what is happening each round.
        i. For example: "Pikachu hits Bulbasaur for 3 points of damage …"
        ii. Have fun with the messages.
    f. Once a Monster is KO'ed the battle ends.
5. Complete the simulation by doing the following …
    a. Each time the player wins a round:
        i. Add 10 points to its health.
        ii. Increase its attack by 1.