```
namespace Collatz_Conjecture // name of program
{
    class Program // class type
    {
        static void Main(string[] args) // intitating function
        {
            Console.BackgroundColor = ConsoleColor.DarkCyan; // changes background colour
            Console.Clear(); // fills entire background
            Console.ForegroundColor = ConsoleColor.White; // changes text colour
            bool isRunning = true; // forces loop
            while (isRunning == true) // while isRunning stays true, the program continues
            {
                Console.WriteLine("Welcome to Devon McAnna's program!"); // text
                Console.WriteLine("Input values to find if the Collatz Conjecture is true."); // text
                Console.WriteLine("When a number is even it divides by two. When odd, it multiples by three and adds
one."); // text
                Console.WriteLine("The Collatz Conjecture says that an input number will always end at 1."); // text
                Console.WriteLine(" "); // spacing
                Console.WriteLine("DO NOT USE 1 OR LOWER - MUST BE POSITIVE"); // text
                Console.WriteLine("DO NOT USE A NUMBER LONGER THAN 10 DIGITS"); // text
                Console.WriteLine("__________"); // line spacing
                Console.WriteLine(" "); // spacing
                string varX; // input string for variable x
                Console.WriteLine("Choose a variable."); // asks user input for x
                varX = Console.ReadLine(); // input line
                Console.WriteLine("Variable chosen.", varX); // text
                Console.WriteLine(" "); // spacing
                if (Int32.TryParse(varX, out int number1)) // checks if x input is a number
                {
                    string varXcheck = varX; // as long as varXcheck is true, varX is converted
                    int varXint; // defines integer
                    bool parsed = Int32.TryParse(varXcheck, out varXint); // checks if varX is a number

                    if (!parsed) // if failed
                    {
                        Console.WriteLine(" "); // spacing
                        Console.WriteLine("ERROR - Input invalid - input whole, positive numbers only."); // text
                        Console.WriteLine("Press Enter to exit and restart."); // text
                        Console.ReadLine(); // does not quit
                    }
                    else // otherwise
                    {
                        int x = varXint; // changes input value to varXint (usable code)
                        int y = 0; // iteration counter
                        while (x != 1) // while x is not equal to one, the program loops
                        {
                            if (x % 2 == 0) // checks if x is divisible by two without any decimals (even)
                            {
                                x = x / 2; // divides x by two
                                Console.WriteLine("EVEN - Value x is now = " + x); // text
                                Console.WriteLine(" "); // spacing
                            }
                            else // if x is not even, it multiplies by three and adds one
                            {
                                x = (x * 3) + 1; // x is multiplied by three and has one added
                                Console.WriteLine("ODD - Value x is now = " + x); // text
                                Console.WriteLine(" "); // spacing
                            }
                            y++; // increases iteration number
                            Console.WriteLine("Iteration number = " + y); // text
                            Console.WriteLine("__________"); // line spacing
                            Console.WriteLine(" "); // spacing
                        }
                        Console.WriteLine("Press enter to restart."); // text
                        Console.WriteLine("__________"); // line spacing
                        Console.WriteLine(" "); // spacing
                        Console.ReadLine(); // keeps program open until enter is pressed, then reruns the loop from
"while (isRunning == true)"
                    }
                }
            }
        }
    }
}
```